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RECENT PROGRESS IN THE ART AND SCIENCE OF MEDICINE.[1]

By L. J. JARVIS NYE, M.B., Ch.M.,
Brisbane.

ONLY a few decades have passed since Molière said: "Medicine is the art of amusing the patient while Nature effects a cure." How indignant were the physicians of the day at such cynical condemnation of their science, yet the truth of those words is apparent to us, since at that period of history there were few, if any, remedies of true specific value. How equally truly these remarks could be applied to some of the therapeutics of the era of medicine which we are even now only just leaving behind us, for few honest practitioners will deny that many prescriptions of today contain drugs which have not more specific value and no more possibility of curing a patient than the decoction of frog's eyes and cockroach legs of the mediæval quack. But the science of medicine is blazing a new trail, and whilst we are still groping in the dark in some of our problems, we now have many remedies which we can apply with reasonable certainty of obtaining a desired result, and correct diagnoses are being arrived at with a precision and celerity unknown to our forefathers.

At first sight the number of quacks in our midst might be considered an indictment on our professional skill, but in reality it indicates that the science and the art of medicine have not advanced at the same pace. The doctor has been so busy studying the intricacies of anatomy, physiology, pathology *et cetera* that there has been little time to devote to the art of adjusting such relationships as were implied in the good bedside manner and the family confessorship that were the glories of

[1] Read at a meeting of the Medical Section of the Queensland Branch of the British Medical Association on December 9, 1935.

the older practitioners. Our neglect in this respect has given a great opportunity to the charlatan, whose whole *modus operandi* is based on the psychological approach. Fortunately medical men are commencing to realize that this aspect forms an important part of their skill, and in consequence the study of psychology is becoming a more integral part of the curriculum.

The old days when doctors could browbeat and terrorize their patients are fast disappearing, and the modern practitioner is realizing that he must first and foremost gain the confidence of his patient by friendly and kindly questioning. This is the first key to successful medical practice and means simply a good transference from patient to doctor. Such a transference gives the patient confidence in the ability of the medical man to effect a cure, or at least to handle the case as successfully as possible. A good transference is also necessary in order to elicit a complete and true history of the complaint; and it is no exaggeration to state that in at least 30% of cases a reasonably correct diagnosis can be made on the history alone. In gastro-intestinal conditions especially is the history all-important, since from a study of the type of symptoms, periodicity, location and relation to function, the whole diagnostic structure can be built. In the modern scientific era there is much to be deplored in the tendency to make a diagnosis purely on a basis of laboratory tests, which should be used only as adjuncts to clinical diagnoses. It is admitted that certain routine laboratory tests should be carried out on all patients, such as examination of the urine, Wassermann or Kline test, and estimation of the hæmoglobin value of the blood. The technique of the Kline test is so simple that it can readily be carried out in any small laboratory, and its importance is obvious to all when it is realized how frequently syphilis is found to be present in patients who exhibit only minor manifestations of the disease at the time of examination. As evidence of its importance it is of interest to note that in 4,500 consecutive patients examined at the Brisbane Clinic for all types of complaints, 0·94% gave a positive reaction to the Kline test. In some of these the history and clinical examination gave no clue to the underlying luetic condition.

The stethoscope is losing much of its past glory, and it is probable that the practice of medicine would actually benefit if it were entirely discarded, for when deprived of its mystic power the clinical sense would have to revelop on better lines. With the passing of the stethoscope, X rays have become by far the most important aid to diagnosis, and their use is being availed of more frequently, especially in heart, chest and stomach complaints. It is necessary that the clinician should always make a careful study of the possible location of the lesion and not require the whole of the body to be examined by X rays in the hope of finding something abnormal. Such an attitude detracts from efficiency and adds so much to the cost of modern medicine.

The place occupied by surgery is gradually becoming restricted to narrowly defined specialties in which there is no place for any but the skilled, highly trained surgeon; and, fortunately, the days are fast disappearing when innocent so-called chronically inflamed appendices, gall-bladders and ovaries are removed by junior inexperienced practitioners in the vain hope of curing some indefinite right-sided pain. The days are also passing when a retroverted uterus, in its normal position for certain types of build, is hitched up to the anterior abdominal wall in the expectation that such a fixation will relieve a tired back or nervous debility.

By better methods of diagnosis and treatment much of the surgery of the past three decades is being eliminated, and we are only just beginning to realize how futile and incapacitating much of it has been. I have had the good fortune to talk with two leaders in British medical thought: one Lord Moynihan, the doyen surgeon of his day, and the other Lord Horder, the King's physician. The former, when speaking of surgery, said: "Gall-bladders and duodenal ulcers should never come to the surgeon", meaning that early diagnosis and treatment should prevent the development of pathological change sufficient to warrant an operation. The latter, on the same topic, said: "In surgery there are two risks, one a minor and one a major. The minor is that the patient may die as a result of the operation, and the major is that the patient may not be improved." Everywhere this change of thought is becoming manifest, and today the mortality risk and the economic result seriously temper the urge of the surgeon to demonstrate his skill.

The pre-operative preparation of the patient is being studied much more carefully, and operation is withheld until conditions are most favourable for a successful result. The mortality rate in gastric operations with stenosed or obstructed outlet has been greatly lessened by a period of pre-operative gastric lavage and feeding with high carbohydrate food, while in colon surgery, in which the mortality from peritonitis was formerly appallingly high, the risk has been reduced to a minimum by a careful pre-operative high-caloric, low-residue dieting, bowel lavage, peritonitis vaccine and glucose administration. Similarly with post-operative care states of dehydration and shock are treated promptly with intravenous saline and glucose solution injections and blood transfusion, all of which are always available for immediate use. Respiratory infections, which also mar the surgeon's figures, are likewise aborted or their severity is lessened by the administration of oxygen in a properly constructed tent at the earliest possible moment.

Coagulability of Blood Plasma.

The recent researches of Nygaard on the coagulability of the blood plasma promise to minimize the mortality from post-operative hæmorrhage, especially in the case of jaundice. It also affords great help in typing patients as regards the possibility of their being the subjects of post-operative embolism or thrombo-phlebitis. His studies have

been based on the work of Howell, who made the observation on hæmophiliacs that the detection of the hæmophilic condition could be facilitated by first oxalating the blood and then recalcifying it with an optimum amount of calcium. Nygaard has shown that coagulability of plasma parallels coagulability of whole blood, and by his tests on oxalated plasma it is possible to determine a hæmorrhagic tendency or a thrombotic tendency, the surgeon being thereby given a valuable indication as to operative risks. By these tests he has also dispelled the long cherished belief that calcium increases the coagulability of the blood in cases of jaundice. While calcium has no effect, he has demonstrated that considerable improvement of the "coagulability index" is brought about by a glucose 10% solution in 1% saline solution injected intravenously. This should be given to all jaundiced patients before operation.

Gall-Bladder.

The improved methods of diagnosis and treatment in early gall-bladder disease promise to save many patients from the surgeon's knife. The whole question of gall-bladder and liver physiology has presented an intriguing but difficult problem, and, although the normal bile chemistry has not yet been understood, much progress has been made in the perfection of methods of the determination of the main constituents of bile and the variations that occur in association with pathological changes. This has been responsible for the improvement in clinical investigation and treatment of these conditions. There is a growing school of thought which considers the gall-bladder to behave in a parallel manner to the stomach, that is, if that organ is atonic, the gall-bladder is also atonic; if the stomach is hypertonic, so is the gall-bladder. This gives one a better understanding of gall-bladder pathology and a lead towards the appropriate treatment. By careful dieting, duodenal drainage and exercises much can be done towards improving the function of the gall-bladder in the absence of stones. In the presence of calculi or non-visualization with high grade cholecystitis, cholecystectomy is necessary, but it is now definitely maintained that the gall-bladder should not be regarded as a vestigial organ to be removed without adequate or justifiable reason. The mere presence of flatulent dyspepsia or upper right quadrant discomfort or pain is not sufficient indication for operation, and, contrary to previous teachings, it is now known that if the gall-bladder is removed in these cases, benefit rarely results.

Gastric and Duodenal Ulcer.

There is probably no field of medicine which requires more careful consideration than that of the dyspepsias, as a cause of which ulcers are far less common than they are diagnosed, and when they are found the advice and treatment given to patients are usually quite inadequate. Such patients should be taught something about the factors predisposing them to ulcer formation and how these effects can be minimized. They must also be taught to take care of their stomachs throughout the whole of their lives, for it should be impressed on them that a patient who has had an ulcer, even when healed, always has a potential ulcer. Furthermore, no ulcer should be considered healed until the following three criteria are satisfied: (i) the disappearance of symptoms, (ii) the disappearance of occult blood from the stools, and (iii) the absence of a crater in the Röntgenogram.

There is a growing belief that surgery has little place in the treatment of gastric and duodenal ulcers. The need for operation in the past has been brought about mostly by faulty diagnosis and inefficient treatment, and because an ulcer diathesis is not recognized early enough. Hurst and Venables now believe that most ulcers will heal under thorough medical treatment and that the ulcers which fail to heal are precisely those which fail to respond or which recur after surgical treatment. Surgery therefore can no longer be looked upon as a more certain means of cure than efficient medical treatment. The only effective way of treating those ulcers which fail to respond to medical care is by a two-thirds total gastrectomy.

Thyreoid Gland.

Throughout the world there is a definite decrease in the incidence, toxicity and mortality from goitre. This happy result is considered to be due to the almost universal use of iodized salt in endemic areas, earlier operation, better surgical technique, and the routine use of iodine before operation; the last-mentioned procedure has reduced the incidence of hyperthyreoid crises to vanishing point. In another field, however, the thyreoid gland is again coming into prominence, for, by its total removal, some patients with congestive heart failure and angina are very definitely benefited, the result being due probably to reduced basal metabolic rate and general slowing down of bodily activity. This operation of total removal is associated with a very high mortality, except in the hands of expert surgeons, for the result is not satisfactory unless the whole of the gland is removed, and in the attempt to do so there is great danger of damaging both recurrent laryngeal nerves.

Essential Hypertension.

In spite of the apparently increasing morbidity and mortality from essential hypertension, and the very pessimistic outlook in the established methods of treatment, some progress has been made in our knowledge of the mechanism and treatment of essential hypertension. This knowledge has followed on the results of sympathetic ganglionectomy and trunk resection in patients suffering from vaso-spastic lesions of the arteries, in whom it is found that the peripheral blood flow is increased after operation. Adson and Brown, who have been pioneers in this field, considered it reasonably possible to interrupt sufficient vaso-constrictor fibres to alter the arterial tension, and they devised an operation to obtain total sympathetic denerva-

tion of the splanchnic region and of the suprarenal glands in severe cases of essential hypertension. Admittedly the operation is a major procedure, but in view of the progressive nature of the hypertension and the short expectation of life, the results have been very satisfactory—the majority of their patients have been relieved of their symptoms and some have been able to return to their former work. In order to get a major effect, Adson now resects all the anterior spinal nerve roots from the sixth dorsal to the second lumbar segment, and since the sympathetic fibres leave the cord by way of the anterior nerve roots, all these fibres below the diaphragm will be cut, including those in the splanchnic region and suprarenal glands.

There is now a vast amount of work being done on the sympathetic nervous system, and it is pleasing to note that, although few agree with the explanations put forward by Hunter and Royle, nevertheless they are given credit universally for the excellent pioneering work they have done in this field.

Myasthenia Gravis.

In *myasthenia gravis* the recent work of Boothby and others has done much towards rehabilitating heretofore helpless sufferers. In a large group of patients, by administering glycine and ephedrine, the muscle tone has been restored sufficiently to enable them to return to their work. Glycine is the simplest of the amino-acids, and it is probable that a deficiency of this substance in the muscles is the cause of the fatigability characteristic of the disease. Boothby has found that in many cases glycine also helps to overcome atonia and fatigability experienced by people in otherwise normal health, and he has concluded that the action of glycine is not specific for the fatigability of *myasthenia gravis*. He has stressed the necessity for early diagnosis, since most cases go unrecognized for years, during which time the patients are considered neurotics or malingerers, and the resulting psychological trauma makes rehabilitation much more difficult. Almost invariably the first muscle groups to show evidence of fatigability are the muscles of the eyes which are concerned with focusing, and therefore any symptoms such as blurred vision or diplopia, also ptosis coming on especially at the end of the day, must be regarded with suspicion. In the majority of Boothby's cases this history could be elicited many years before the correct diagnosis was made, for, like many other chronic diseases, *myasthenia gravis* is characterized by periodic remissions.

Sinusitis.

The recent study of allergy has thrown fresh light on the subject of sinusitis. The allergic vulnerability of mucous membranes in such conditions, for example, as hay fever, asthma *et cetera*, has been long known, but it is now considered that most sinus infections have also an allergic origin. It has been shown that apparently normal sinus membrane may increase to the thickness of one centimetre in a few hours after exposure to some irritant to which the subject is sensitive. Repeated similar attacks cause a state of chronic congestion which interferes with blood supply and drainage and thus forms a fertile ground for bacterial growth. When definitely infected tissue is present, radical surgical treatment becomes necessary, but when in the state of congestion much can be done by treating the patient on allergic lines. Similarly, nasal polypi are considered to be usually the result of allergic vulnerability, as is the congested nose and posterior pharynx so often seen in children.

Fever Therapy.

Since Wagner-Jauregg, in 1918, first described the benefit resulting from the inoculation with malaria of patients suffering from paralytic dementia, this type of treatment has become increasingly popular. On account of the various difficulties associated with malaria treatment, many new methods of inducing fever have been developed, such as diathermy, hot baths, radiant light and short wave therapy. These methods have been claimed to be more successful than malaria therapy or artificial fevers produced by vaccine or the heteroprotein injections, such as milk, peptone *et cetera*, mainly on account of the uncertainty of the resulting fever and the difficulty of its control.

Of the various forms of physical apparatus which have been devised, the Kettering hypertherm is probably the most efficient, safe and reliable. It is an air-conducted chamber in which the body of the patient lies, the head remaining outside. In the chamber the temperature and humidity are maintained at the necessary level to induce a temperature of from 40·5° to 41·5° C. (105° to 107° F.) in the patient for a period of five to seven hours. Besides the benefit accruing to many sufferers from *dementia paralytica* by such treatment, its result on gonococcal conditions is quite revolutionary. For some years past the inhibitory effects of heat on the gonococcus have been known, and various types of local heat therapy have been devised, but nothing has approached the results of fever therapy. After many years of determined attacks on the gonococcus by local irrigations of various antiseptic solutions and "tissue irritants", the efficacy of which most of us have long doubted, it seems certain that we have now at our disposal a method of real cure which actually kills or devitalizes the organism sufficiently for them to be combated by the natural defensive mechanisms of the body. Up to date the gonococcus is the only organism of which the lethal temperature has been determined, and it is possible that other organisms may be found with similar lethal temperatures. If such should be the case, a large field of therapy may result from this accidental discovery. As well as in syphilis of the nervous system and gonorrhœa, fever therapy has been used in chorea and infective arthritis with beneficial results, but the outstanding achievement has been with gonorrhœa in its various manifestations; in acute gonorrhœal arthritis the pain and swelling usually disappear after the first and second treat-

ments and there is complete and permanent resolution of all the inflammatory processes.

Syphilis.

The lives of many men and women have been ruined by neurosyphilis or vascular syphilis after they had undergone a course of treatment which their medical advisers had considered adequate. As the result of these tragedies we now know that syphilis requires much more intensive treatment than was formerly believed necessary, and no treatment should be considered adequate unless, in addition to giving normal responses to blood tests, the patient has a cerebro-spinal fluid which has been pronounced normal both as regards cell count and response to the Wassermann and Kline tests. In the light of modern knowledge it should be considered a criminal offence to discharge a luetic patient as cured unless this precaution has been taken.

Bacteriophage.

Treatment by bacteriophage promises to add still another milestone on the road of achievement in prevention and treatment of infections. Since Twort first discovered this lytic phenomenon twenty years ago, the science of bacteriophagy has made steady progress, owing chiefly to the work of d'Herelle, who has directed his activities to the dysentery-colon-typhoid group of organisms, and Gratia, who first isolated the bacteriophage parasitizing on staphylococci.

The antistaphylococcus bacteriophage made in a broth medium for local application or in an asparagin medium for injection into the tissues or blood stream, has now been definitely established as being probably the best therapeutic measure, not only for local staphylococcal infections, such as carbuncles, boils, skin infections and osteomyelitis, but also for staphylococcal septicæmia (combined with repeated blood transfusions); and there is considerable hope that similar agents will be found for various other infections.

Since the specific bacteriophage will completely destroy bacterial culture *in vitro*, there is definite reason for the hope that eventually a way will be found of destroying these bacteria *in vivo*. The difficulty, however, becomes apparent when it is realized that these peculiar lytic agents will act only against particular bacterial species, and sometimes only against particular varieties within the species; also when they are introduced into the body their action is influenced by many factors, such as hydrogen ion concentration, presence of blood or serum or exudate *et cetera*. Nevertheless the work is along the lines of rational therapy and has already added something of real value to our therapeutic armamentarium.

Gout.

In the past the signs of abnormal purine metabolism have been considered the most important features of gout, but modern workers are now coming to regard these signs as being the result, rather than the cause, of the disease. There is a growing acceptance of the belief that gout is a cellular sensitization, or, in other words, an allergic phenomenon, the exciting factor being endogenous or exogenous proteins of pathological or biochemical origin, in persons with a gouty diathesis.

Drug Therapy.

There is a definite tendency throughout the Anglo-Saxon world to minimize the use of drugs, and the day is fast approaching when the fetish of giving a placebo mixture and the familiar out-patient card filled with "Repeat mist" will be relegated to the distant past. At the Brisbane Hospital the annual bill for drugs amounts to the colossal sum of £7,000, and one cannot but ask the question: how much benefit has resulted from this enormous outlay? We have not yet learned to prescribe only the drugs which we know to have specific value. Instead of hiding behind the ritual of a prescription written in unintelligible Latin, we must probe more into the mode of living of our patients, review their domestic environments and their economic problems *et cetera*, and spend more time teaching them how to regulate their lives and make correct adjustment of their minds and bodies. If we are honest with ourselves we should limit the number of drugs prescribed to comparatively few. We need also to review carefully the dosage, since in many cases the pharmacopœial dose is too small or in some cases too large. A few words on some useful drugs might be opportune.

Iron.

The work of Witts on anæmia has taught us a great deal about the use of iron in the treatment of hypochromic anæmias. It is believed that for iron to be absorbed it is necessary for it to be soluble, ionizable and ultrafiltrable. The iron of food is apparently mainly ferric iron, but before it can be absorbed it must be converted into the ferrous salt; this conversion is brought about by the free hydrochloric acid in the gastric juice. In some cases of achlorhydria there is difficulty in liberating iron from the food or in converting it into the absorbable ferrous salt; it has been suggested that this is the probable cause of the anæmia in achlorhydric anæmia (idiopathic hypochromic anæmia). The remarkable improvement effected in these cases on administration of ferrous salts is very significant. Anæmia as a cause of debility is far more common than is generally realized, and these sufferers can be greatly benefited, since all secondary anæmias, including those from hæmorrhage, respond very rapidly to the administration of large doses of iron. Iron and ammonium citrate in doses of 2·0 grammes (thirty grains), reduced iron in doses of 0·6 gramme (ten grains), three times a day, and ferrous carbonate or sulphate in doses of 0·18 gramme (three grains), three times a day, are equally efficacious. With such doses there is usually a rise in hæmoglobin of 1% per day. Larger doses than these are not advisable, since both Hurst and Venables have

reported cases of iron encephalopathy resulting from massive doses. The once popular and painful injections of iron are now known to be of little value. Arsenic, another old favourite, is also of no value in the treatment of anæmia. Copper is an important factor in the formation of hæmoglobin, although not actually a constituent. It is contained in many foods, especially in oysters, liver, cocoa and molasses. The advantage of adding copper in the treatment of anæmia is questionable, as the amount required is very small, and, if iron is being given, the copper which exists in these salts as an impurity is sufficient for therapeutic purposes.

Hexamine.

The use of hexamine as a biliary antiseptic is now well established, and, although it is inactive in the urinary tract unless formalin is set free by an acid medium, it has been shown to be antiseptic in the alkaline biliary tract.

To have this bactericidal effect it is necessary for the drug to be taken in large doses, and in order to prevent kidney irritation the urine must be kept constantly alkaline. Hurst advises giving 4·0 grammes (60 grains) of bicarbonate of soda and citrate of soda three times a day or more until the urine is alkaline, then adding 6·0 grammes (100 grains) of hexamine three times a day. This treatment may be maintained for six weeks, combined with non-surgical drainage in cholecystitis, and it is also recommended both before and after surgical treatment as a useful aid to sterilizing the biliary tract.

Alkalis in Peptic Ulcer.

As there is little doubt that free hydrochloric acid in the stomach contents plays an important part in the causation of gastric and duodenal ulcer, it is very rational therapy to attempt to neutralize it completely in such cases. On the other hand, the indiscriminate use of alkalis is to be guarded against, especially in Queensland, where the incidence of ulcer is not great, as Apperley and I have previously shown. Sunstrop also demonstrated that in the tropics there is normally a relative alkalosis due to over-ventilation of carbon dioxide and to loss of chloride in the sweat, while Sippe and I also showed that the incidence of achlorhydria was greater and the gastric acidity curve much lower in Brisbane than in Melbourne. Absorbable alkalis should therefore be given with caution in hot climates, owing to the risk of producing alkalosis. When definite hyperacidity has been demonstrated it is well to use the alkali which has the best neutralizing effect. Gibson, Freezer and Matthews have carried out physico-chemical tests on the commonly used alkalis with the following results. In standard tests oxide of magnesia and bicarbonate of soda reached a pH value of 10·0 and 8·0 respectively in less than one minute; carbonate of magnesia reached a pH of 8·5 in two minutes; sodium and potassium citrate and tribasic calcium and magnesium phosphate attained neutrality (pH 7·0) within one minute, and calcium carbonate attained neutrality in two and three-quarter minutes, but none of the last mentioned solutions ever became alkaline. Bismuth oxycarbonate reduced the acidity to only pH 4·0, while "Alocol" and "Neutralon" were even less effective. Although from these tests it is seen that oxide of magnesia and bicarbonate of soda have the greatest neutralizing power, it has been shown that after neutralization they stimulate the production of more acid; and, if histamine is excepted, they are the most powerful gastric stimulants known; for that reason they should be given in only small doses, if at all. In the past it has not been realized sufficiently that potassium and sodium citrate are excellent neutralizers; the latter combines well with milk, which also neutralizes an equal volume of 0·3% hydrochloric acid, so that citrated milk is probably second only to calcium carbonate as an ideal neutralizer for free hydrochloric acid. Tribasic phosphates of magnesium and calcium are much less satisfactory, probably owing to the production of an irritating acid phosphate in the stomach.

Salt.

There has been considerable interest in salt therapy since the discovery was made that in patients with Addison's disease much of the loss of tone was due to low blood chlorides and that great improvement was made on the administration of salt; in fact in some cases salt seems to afford just as much, if not more, benefit than the adrenal cortical extracts. It has also been found that in all states of dehydration, especially in diabetic coma, there is a definite fall in chlorides, and copious saline solution given subcutaneously or by mouth helps greatly in the process of recovery. In order to compensate for the loss of chloride in people who perspire freely, it is advisable for them to add extra salt to their food, and for some time past salt has been the recognized treatment for heat stroke, the symptoms of which are due mainly to depletion of blood chlorides by excessive sweating.

Diet.

For generations there has been in vogue an old saying: "What is one man's meat is another man's poison", yet the medical profession has endeavoured to make a list of readily assimilable foods and to force them upon all and sundry, regardless of individual likes and dislikes or ability to digest them. Of late years the allergist has become prominent in the field of dietetics, and we now know that a great many gastro-intestinal disorders, as well as headaches, general malaise and skin lesions are brought about by food sensitiveness. Rowe found that 30% of normal healthy students and nurses were sensitive to certain foods, and Alvarez, in a review of the diet of five hundred persons, found that so great a proportion as one in four was sensitive and suffered various degrees of disability from eating such commonly used foods as milk, apple, cabbage or onion. This suggests that milk is not the ideal food for all adults, as is usually

believed, and also disproves the old adage that an apple a day keeps the doctor away. Chocolate, eggs, tomato, radishes and cucumber are the next most common offenders, and it is interesting to note that chocolate heads the list amongst sufferers from migraine. This subject has become so important that a careful study of the diet must be made in all persons suffering from non-syndrome dyspepsias, especially those arising from the intestine, from eczema, urticaria and other allergic states. By carefully planned elimination diets many a sufferer can be rid of a long-continued disability.

After some years of intensive campaigning by vegetarians there is now a swing towards advising more meat in the diet. Donaldson, of New York, claims excellent results by putting most of his patients on a diet of at least half a pound of fat meat with each meal. Mosenthal has also carried out favourable investigations on this subject and denies that a high protein diet plays any part in the production of arteriosclerosis and nephritis. These opinions are backed up by sound scientific reasoning. Thomas, in a review of the health of the Eskimos, found no evidence that their high protein diet caused hypertension and nephritis; also Keogh and Keogh reported that, although the Greenlanders live on a diet containing an enormous amount of animal protein (280 grammes daily), they could find no evidence of renal irritation. This opinion is also confirmed by our own observation on our western cattle men, who follow hard lives on a diet largely of meat, yet who live to be our oldest and toughest types. The study of comparative anatomy also strongly suggests that Nature intended man to be largely carnivorous in his diet. In carnivorous animals the bowel is short, while in the herbivora there is much greater length of bowel to permit the splitting of cellulose for the necessary bacterial disintegration. Compared with the length of their respective spinal cords, a sheep's bowel is almost twice as long as that of a man.

Neuroses.

The labours of Freud, Adler, Jung and of contemporaries too numerous to mention are rapidly improving our whole attitude to the neuroses and psychoneuroses. They have taught us the dynamic force of words, the meanings of dreams, the importance of environment, more particularly in childhood. A technique in case management is being evolved, which at the hands of the expert is transforming the dreary outlook of the neurasthenic into one of increased hopefulness. It must be conceded that the psychiatrist's outlook must be highly specialized, and in consequence patients suffering from fears, anxiety, obsessions are being referred as early as possible to such specialists.

Deficiency States.

Since the work of Castle, which indicated that pernicious anæmia was really a deficiency disease due not to a deficient diet, but to the absence of a specific factor in the body, there has been a growing consciousness of this possibility in other disease states, amongst which are idiopathic hypochromic anæmia, pellagra, polyneuritis of alcoholism and of pregnancy, and some cases of nutritional œdema. I have seen cases of the last-mentioned group from the hot western districts, which in the past we had attributed to avitaminosis, although the diet appeared to be adequate in vitamin quality and quantity. This evolution in our knowledge of disease is very interesting, for until recently disease was always associated with the presence of some abnormal factor, but the discovery of vitamins showed that the absence of a normal factor from the diet was also a common cause of disease; and now we have come to realize that disease may also result from inability to absorb or utilize essential food substances which are present in the diet. It is not without reason to suggest that some amount of the deficiency states in Australia may be due to this failure, since food is so varied, good and cheap.

Aperients.

There is a growing realization that aperients as used by most people are abusing the normal mechanism and function of the bowel and disorganize the bacterial flora in their natural processes of food disintegration. Furthermore, few people really suffer from true constipation, and if they would have patience and endeavour to train their bowels by exercises and right food there would be little need for aperients. It is not well enough realized that the act of defæcation is a conditioned reflex and, like all conditioned reflexes, depends upon a regular set of circumstances, which must be carried out regularly in order to maintain the normal function of this reflex. There should be a regular programme, such as a morning cup of tea at a regular time, then defæcation; or breakfast, then defæcation. The reason why regularity must be insisted upon is purely to retain this conditioned reflex. Admittedly there are a few people in whom some form of assistance is necessary besides diet and exercise. For them plain liquid paraffin or some vegetable mucilage, such as agar, usually suffices, but if an aperient is necessary there is nothing better for most people than senna, either in a confection with figs and dates or raisins, or, if there is any colic, a cold infusion of the pods, which is not colic-producing, may be given. Another good method of training the bowels is to inject a small amount of normal saline solution at the regular time daily and gradually to reduce the quantity till the bowels function normally. It is estimated that in England £10,000,000 are spent annually on patent medicines, and the majority of these are aperients, which are usually quite unnecessary. The quantity of agar contained in most of the preparations of paraffin with agar is so small as to be negligible, while the addition of phenolphthalein is merely adding the aperient with which it is claimed these preparations dispense. Similarly, there is a new vogue in aperients which are supposed to contain extracts of bile and intestines in small amounts, none of which could have any

possible effect on bowel function; whatever action they possess must be due to the addition of some simple aperient.

Commercial Drug Houses.

It is extraordinary how not only the public but also the medical profession are bombarded by modern sales talk into accepting as reliable and scientific anything which a commercial drug house may choose to put forward. We rarely stop to analyse the evidence in a critical way, but become obsessed with the desire to be among the first to prescribe this vaunted new-fangled remedy; thus the pharmacist's shelves become loaded with a varied collection of expensive nostrums of doubtful value which wax and wane in popularity as unreasonably as the fashions of women. All this adds enormously to the cost of medical service. Once again we must ask ourselves whether we are not largely responsible for this cost, and the reply is certainly in the affirmative.

This is particularly applicable to glandular therapy, and in this regard the recent utterances of Emil Novak, one of the world leaders in endocrinology, are particularly apropos:

> It is appalling to think how many billions of ovarian tablets had to be ingested before the profession was convinced of the inefficacy of the method. As a matter of fact this grandiose therapeutic experiment would still be in progress had it not been for the cruel disillusionment emanating from the laboratories. That there is still a vogue for this form of treatment is an excellent illustration of the painful slowness with which new knowledge permeates professional practice. With the discovery of the functional importance of the *corpus luteum* the new fad of this therapy had to run its course as inevitably as a case of measles, side by side with the practice of giving ovarian tablets or capsules or, later, ovarian residue in one form or another. All these substances were rather costly to the patient, and the national cost of such medication would total a figure that would not be unimposing even in this day of stratospheric finance.

Although one must not belittle the brilliant work which has been carried out in more recent years on endocrine physiology, especially in reproductive endocrinology, it is well to remember the well known endocrinological law, that no ductless gland is stimulated by its own secretion and that all that can be expected from any of the newer ovarian preparations is merely substitutional therapy; in other words, they can no more reactivate the ovary than thyreoid extract can reactivate the thyreoid gland.

Liver extract is another expensive preparation which the commercial houses are pushing to a degree far incommensurate with its actual value, since it is doubtful if it is of any specific value (except for its vitamin *B* content) in any anæmia other than those of megaloblastic type and agranulocytosis.

Happily there is an increasing tendency to encourage more rational thinking by practitioners. In our training we learn so much of our work by rote that we have become stereotyped or mentally blind. Until the discovery of the bacterial origin of disease only a few short years ago all disease was believed to be caused by diathesis, smells and evil spirits *et cetera*; once bacterial infection became established the pendulum swung to the oposite extreme and all disabilities were regarded as being bacterial in origin. We are only just beginning to realize more fully that there are many other factors. We now know that deficiency in the quality of the diet and inability to absorb vital food substances are potent factors in disease. We have found lead poisoning to be the cause of much of the arteriosclerosis of young people in Queensland, and yet in most countries in the world vegetables and fruit are still being sprayed with very toxic quantities of lead and arsenic, both of which are cumulative poisons. As the incidence of arteriosclerosis is increasing annually, is it not possible that this lead absorption may also be a factor to be reckoned with in addition to the unnecessary stress and strain of modern life? Again, few of us realize sufficiently how important psychological factors are in the causation of disabilities of the body and the resulting emotional instability. No amount of expensive drugs and glandular extracts are going to help these people unless they are mentally adjusted. Lastly, there are disabilities resulting from our changed mode of living. Pyorrhœa and dental caries are outstanding examples of this. While scientists talk about *Bacillus acidophilus*, food impaction, vitamin deficiency, malocclusion *et cetera* as being the cause, they entirely neglect the primary factor which is responsible for lowered resistance to infection, namely, deficient blood supply. When in North Queensland I had the opportunity of examining the teeth of aborigines in their native state. The teeth and gums were invariably in a perfect state of health. Their diet was mainly of roots and other vegetable matter, native birds and animals, all of which, on account of being constantly on the wing, running and jumping, are tough and muscular. To eat such food it is necessary to tear and chew it vigorously with the teeth, thus maintaining a good blood supply. On the other hand, as soon as these aborigines are brought into civilization and live on modern soft foods they become probably more susceptible to caries and pyorrhœa than we are. The only difference in the life of these people and the only change in our lives since the great prevalence of these diseases is one of the physical qualities of our food. Just as with the civilized aboriginal, we rarely chew our food, since anything which is tough in these modern days is put aside, and as our teeth become devitalized from having little work to do, there follows the invariable rule of deficient blood supply and atrophy from disuse. If we are to maintain healthy teeth we need to think in other terms than vitamins, of which we are getting more than ever before in the history of man; rather of improving the blood supply by getting back to fundamental habits of chewing. I feel confident that the institution of a tough chewing gum would do much to restore this rapidly diminishing blood supply. We see the truth of these teachings so evident before us in cases of gastrostomy when the

patient is fed through a gastric tube. As no food enters by the mouth there is no chewing and as a result severe gingivitis invariably develops. This is quickly overcome by encouraging the patient to chew gum and thus by rehabilitating the blood supply to the tissues the ravages of *Bacillus acidophilus* and other organisms are combated.

Another modern physical factor which has been responsible for an increasing amount of disability is the wearing of tight and improperly fitting shoes which distort the natural shape of the feet and interfere with the circulation with the resulting damage to function. The remedy is one of prevention and a return to Nature's methods by teaching walking exercises in the bare feet.

The wearing of heavy and tight clothing in hot climates is yet another important physical detail in our modern lives which inhibits the normal heat-regulating mechanism of the body with inevitable repercussions upon body health. Greater interest is now being taken in the study of physical factors as causes or aggravators of disabilities. It is believed that medical practitioners, by forcing their chronic rheumatic patients to rest their joints in bed and by thus encouraging the formation of adhesions and ankylosis, have caused more permanent disabilities to joints than the disease itself. The modern treatment is that every joint should be put through a full range of movement at least twice daily. Attention is paid to postural and feet deformities in order to prevent too much strain from falling on any particular joint or joints, while great efforts are made to reduce the body weight in abnormally heavy individuals. Above all, the patients are encouraged to continue their routine daily occupation and to acquiesce in their disability. Reduction of abnormal weight is also one of the most important adjuncts to the modern treatment of heart disease, arteriosclerosis and hyperpiesia.

Group Practice.

No account of the progress in medicine would be complete without reference to the necessity for increasing specialization, which requires far greater coordination between those to whom each individual study is relegated. In order to preserve correct balance and coordination there is a growing belief throughout the world that group practice must eventually supersede individual practice. It has existed for many years in the public hospital, and if private practice is to survive it is necessary that similar efficiently conducted systems must be introduced into private practice.

Conclusion.

In the time at our disposal there has been opportunity to review only a part of the new medical endeavours. Limited though it may be, there is surely sufficient to emphasize our three major needs: the open mind, the logical review, and the will to accept new thought. Particularly appropriate are the words of that great scholar and physician, Clifford Allbutt, when discussing the changing point of view in medicine:

> Yet nevertheless, as the generations of men change and as knowledge increases, men see from new points of view; and thus, whilst for some the reigning vision retains its apparent solidity, for others its rays are broken and dissolved. For every synthesis then, the time must come when the apparition of truth can no longer command united allegiance and criterions begin to encroach upon sanctions.

CONTROL OF BLEEDING IN NOSE AND THROAT OPERATIONS.[1]

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BEFORE discussing the question of hæmorrhage associated with nose and throat operations, it is desirable that we at least briefly consider the physiology of blood coagulation and the theoretical methods of its control.

Coagulation of the Blood and its Theoretical Control.

Coagulation of the blood after it is shed (that is, the transformation of the fibrinogen of the circulating blood into the insoluble fibrin of blood clot) is due to the action of the fibrin ferment (thrombin) on the soluble fibrinogen of the plasma, which forms an insoluble protein—fibrin. Most authorities (Bordet, Delange, Nolf, Fuld, Morawitz) agree that coagulation is due to the intervention of two substances: one, called thrombogen by Morawitz, and serozyme by Bordet and Delange, is said to exist in solution in the blood serum; the other, called thrombokinase by Morawitz, and cytozyme by Bordet and Delange, is said to be secreted by the blood platelets or damaged tissue cells. The thrombokinase is set free from the platelets when blood escapes from blood vessels, and combines with thrombogen of the serum to form thrombin (fibrin ferment), the active fibrinogen ferment which provokes coagulation. The following is a tabulation of the process:

Blood Serum	Thrombogen (Morawitz) or Serozyme (Bordet, Delange) or Plasmozyme (Fuld)	Thrombin (fibrin ferment)
Blood Platelets	Thrombokinase (Morawitz) or Cytozyme (Bordet, Delange, Fuld) or Thrombozyme (Nolf)	

Fibrinogen + thrombin (fibrin ferment) = fibrin.

The equations as put forward by Howell are as follows:

Cellular elements supply thrombokinase.
Thrombokinase + free calcium ions + prothrombin (or thrombogen) = thrombin.
Thrombin + fibrinogen = fibrin.

The precise details of the changes that produce blood clotting are still disputed by hæmatologists, and certain antithrombin bodies have been described but not proved.

[1] Part of an address on "Some Subjects of Interest in Nose and Throat Surgery", delivered during a refresher course arranged by the Queensland Post-Graduate Committee at Brisbane on May 28, 1935.

Accepting a prothrombin deficiency as the causal factor in hæmophilia, the various lines of treatment of deficiency in blood coagulation naturally fall into three groups:[1]

Group I (the introduction of normal prothrombin from some foreign source):

(*a*) Blood transfusion by the direct method.
(*b*) Blood transfusion by the citration method.
(*c*) Transfusion of defibrinated blood.

These three methods are the only means by which hæmophilic blood can be increased to any appreciable extent.

(*d*) Intravenous injection of fresh human serum.

Poor in prothrombin but rich in thrombin.

(*e*) Introduction of sheep serum.
(*f*) Introduction of horse serum.

Caution is needed because of the frequent occurrence of anaphylactic phenomena.

(*g*) Introduction of snake venom. Subcutaneous injections of diluted snake venom of the coagulating type have been suggested as a means of improving blood coagulation; its use, however, is in the experimental stage.

Group II (the introduction of any of the other coagulative elements, thus increasing the coagulability by the law of mass action):

(*a*) Introduction of calcium. (i) Administration by mouth has been abandoned. (ii) Intravenous or intramuscular injections of calcium chloride are still used by some surgeons. Solutions of calcium gluconate are suitable for intravenous and intramuscular injection and may prove after further experiments to be valuable.

(*b*) Administration of "Hemostatic Serum" ("Hemoplastin", "Lapenta"—Parke, Davis and Company—and other preparations). The manufacturers of "Hemoplastin" state that the active ingredients are: (i) prothrombin (thrombogen), (ii) thrombokinase (thromboplastic substance), (iii) anti-antithrombin, which is identical with thrombokinase. Christie and Gulland found that calcium was present to the extent of 12·3 to 12·5 milligrammes per 100 cubic centimetres of serum; they believed calcium to be the active ingredient of "Hemoplastin".

Group III (the introduction of some foreign substance in the hope of stimulating more rapid coagulation):

(*a*) Introduction of sodium citrate. The intravenous injection of small quantities of sodium citrate is definitely followed by hypercoagulability of the blood in a normal subject (Weil, Pickering and Hewitt).

(*b*) The administration of peptone is of little value.

(*c*) Protein shock. Venesection in a patient who is in a state of anaphylaxis will demonstrate the increased coagulability of the blood. In one instance I was unable satisfactorily to perform venesection because of the marked coagulability of the patient's blood.

(*d*) Administration of thymus extract. No definite evidence has been produced to prove its value.

(*e*) Introduction of miscellaneous substances into the blood stream or applied locally. Gelatin, raw meat juice, milk, thyreoid extract, ergot, adrenaline, turpentine, perchloride of iron and practically every known styptic have been used with varying success. Christie and Gulland found that the application of fresh human blood applied in cotton wool after all useless clots had been removed was the most efficient coagulant. Brain surgeons know also the value of crushed muscle in producing coagulation when applied to the bleeding cerebral cortex, *pia mater et cetera*.

It has been suggested that hæmophilia may have an allergic ætiological factor; but nearly all conditions nowadays are attributed to this alleged state.

Coagulating Substances Used in Practice.

The substances most commonly used in surgical practice are discussed below.

"Hemostatic Serum."

"Hemostatic Serum" or "Hemoplastin" (Parke, Davis and Company) is stated by the manufacturers to contain all the essential organic participants in the inception of blood coagulation, excepting fibrinogen; but Christie and Gulland state that it is the calcium in the preparation which is the active ingredient. It may be administered subcutaneously, intramuscularly or by mouth, or may be applied locally. In the latter case, applying the serum at body temperature is more efficacious than at room temperature. It is advisable to refrain from using it intravenously. The usual dose is two cubic centimetres subcutaneously two hours before operation.

Precautions.—In asthmatic subjects and other types of sensitized patients caution must be used in the administration of "Hemostatic Serum", because these people are liable to anaphylaxis. The makers claim that if given by mouth it is free from this danger.

"Hemostatic Serum" should be used cautiously when given to patients with liability to thrombosis, for example, in arteriosclerosis, aneurysm, phlebitis, the puerperium, partial stasis of the blood stream following worry, shock, after severe crushing, gout, rheumatism *et cetera*. Should there be signs of thrombus formation or of embolism in a patient who has received injections of serum, intramuscular injections of liver extract may prove beneficial. Reports have been published that "Campolon" (Bayer Products, Limited) has been successfully employed in such a condition.

"Coagulen."

"Coagulen" (Society of Chemical Industry in Basle) is claimed by the manufacturers to prompt hæmostasis by shortening the coagulation time in all forms of hæmorrhage. They state: "It is a physiological hæmostatic derived from normal bovine blood and contains the natural coagulating elements necessary for clotting the blood." Its makers state that it is a cytozyme (thrombokinase) in a condition of nearly complete purity (it is derived from blood platelets—see equations).

"Coagulen" is used to produce local ischæmia of the field of operation and to prevent post-operative hæmorrhage. It is injected subcutaneously shortly before, during or after an operation, five to twenty cubic centimetres of a 3% solution being used. It can be given by the mouth for five days or so before operation by dissolving the powder in water, or may be used locally by applying soaked pads of gauze or sprinkled in a lukewarm solution from a syringe.

"Clauden."

"Clauden" (Luitpold-Werk) is a specially prepared desiccated lung substance. Al. Schmidt established the fact that the components which promote coagulation are physiologically present in

large quantities in the extract from pulmonary tissue. Fische, in Prague (1916) first obtained a preparation from pulmonary tissue for controlling bleeding. Success in accelerating the process of coagulation in itself does not insure success at the point of bleeding. It is asserted by the makers that with "Clauden" coagulation occurs only at the injured spot, and that "Clauden" can be effectively given by mouth, as it is not attacked by digestive enzymes and is absolutely harmless. It can be administered by the subcutaneous, intramuscular or the intravenous route, or by mouth.

The dose is ten cubic centimetres three times a day subcutaneously or intramuscularly, or ten to twenty cubic centimetres once to three times a day intravenously. If the intravenous route is chosen, the solution should be warmed to body temperature and the patient should be lying down and the solution injected slowly. Simply sprinkling "Clauden" on a bleeding area is of no value. As when using the other preparations, it is necessary to remove the clot and swab the surface well before applying the "Clauden". It is claimed that "Clauden" shortens coagulation time, and clots are so compact that scarcely any blood serum exudes from them, and that climate does not affect the preparation. "Clauden" may also be administered by mouth and by the rectum.

Calcium Preparations.

Calcium administered by the mouth is not of much value and its use has been practically abandoned. Intravenous and intramuscular injections of calcium chloride are still used by some surgeons; but they are few.

"Theelin."

Hæmophilia is manifest in males, but not in females, and it is transmitted by the females of a hæmophilic family. Birch found in hæmophilic males no trace of the female sex hormone, which is usually found in male urine, and he found "Theelin" (follicular hormone) to be very effective in hæmophilia. He obtained success in the treatment of the condition by injecting one cubic centimetre of "Theelin" intramuscularly and repeating daily for three injections.

Pituitrin.

Atonic conditions of blood vessels may prevent a timely cessation of the blood flow. Therefore, posture of the patient, such as sitting up, standing up, running about, the use of adrenaline or pituitary extract, because of their constricting action upon small blood vessels, may have a beneficial effect upon bleeding from wounds in the head and neck; the effect at times almost seems to be miraculous.

Treatment.

The blood clotting time may be estimated in one of several ways, and the method selected is not so important as one's familiarity with a particular method and the use of that method only. It is for this reason that varying results are so often obtained by different pathologists. It must be remembered too that the normal coagulation time varies greatly in the individual, and according to the method employed, and also whether the blood is taken direct from a vein or from a skin wound. The normal coagulation time is from three to four minutes; but it may be as long as seven and occasionally ten minutes. An average of five minutes is taken as a safety mark and may be considered normal.

Perhaps the simplest method of estimation is by the capillary tube. When using this, one takes a capillary tube of 0·8 to 1·2 millimetres in diameter and about 15·0 centimetres (six inches) long, and draws blood into it, filling it; the tube is then wrapped round with a cloth soaked in warm water at a temperature of about 37·7° (100° F.). After a wait of two or three minutes, 1·25 centimetres (half in inch) of the tube is broken off; this is repeated at intervals of half a minute until the pieces of tubing, after breaking, are held together by a clot. The period is noted and is taken as the clotting time, which is reckoned normally at from three and a half to five minutes. Another simple method consist in tilting a slide with a blood drop on it and noting the change in contour; or a needle may be automatically passed through a drop of blood on a slide at intervals until fibrin forms.

The bleeding time is evidently concerned with the permeability of the vessel wall and its retractibility; but other factors seem to be concerned as well. It can be estimated conveniently by deeply stabbing the lobe of an ear with a cutting needle and wiping away the blood drops as they form by means of triangular pieces of filter paper, care being taken to avoid touching the skin. From the time of the puncture to when the blood ceases to appear is taken as the bleeding time.

In my opinion, for practical purposes, this estimation is of more value than the clotting time. Normally the bleeding time should be two to three minutes. The following case records may be used as examples.

CASE I.—A boy (L.S.H.), aged eight years, was brought for tonsil and adenoid operation. Because all their other children (four) had had serious hæmorrhages that had been difficult to control and caused them great anxiety after similar operations, the parents were very worried about the possibility of bleeding in this child. Dr. Duhig and Dr. Taylor found the coagulation time to be four minutes and the bleeding time to be six minutes. On the day of operation ten cubic centimetres of "Coagulen-Ciba" were injected subcutaneously at 11 a.m. At 2 p.m. the coagulation time was under two minutes and the bleeding time one minute. At 3 p.m. the tonsils and adenoids were removed and the bleeding at the time was noted to be much less than is normally experienced. Two days later another dose of five cubic centimetres of "Coagulen-Ciba" was injected as a precaution against secondary bleeding.

CASE II.—Another instance is that of a young woman (G.J.), aged twenty-eight years, whose coagulation time was estimated by her physician to be eleven minutes, and the bleeding time eight and a half minutes. Four cubic centimetres of "Hemostatic Serum" were injected, and three hours later the coagulation time was ten and a half minutes and the bleeding time five and a half minutes. On the following day, at 11 a.m., five cubic centimetres of

"Coagulen-Ciba" were injected subcutaneously. At 2 p.m. partial middle turbinectomies and intranasal antrostomies were performed, and the remarks on her case card read: "Practically no bleeding at the time of operation and none since."

Case III.—This case is worth noting. The patient was a young married man upon whom, at 2 p.m., submucous resection of the nasal septum and partial middle turbinectomies were performed. Nothing abnormal was noted about his blood at the time of operation; but soon after his return to bed blood began to drip from one nostril. This was not alarming, and at first no notice was taken of it, except to allay the patient's anxiety by giving him an injection of morphine. However, as the bleeding continued, he was given two cubic centimetres of "Hemostatic Serum" subcutaneously, with no improvement. The dose was repeated, still without any improvement. There was a steady, slow drip all night. In the morning the patient's condition was not alarming; but blood was still slowly dripping. Following a practice in cases of nasal hæmorrhage, the nose after operations is only lightly packed, because after local applications of cocaine and adrenaline the mucosa is likely to swell. Tight packing only aggravates this and actually causes bleeding to continue. Moreover, when there is more than slight bleeding after a nasal operation the packing is removed, and this relief of pressure generally is sufficient to bring about a cessation of the bleeding. In this instance the removal of the packing had no effect upon the bleeding. He was given more morphine and ten cubic centimetres of "Coagulen-Ciba"; but blood continued to drip from both sides. The nose was repacked tightly; but blood still dripped, and his condition began to cause concern. It may be mentioned that at intervals an upright posture was adopted, with no beneficial effect. An attempt then was made to inject "Clauden" into a vein; but, the blood pressure being so low, it was unsuccessful. He was given ten cubic centimetres of "Clauden" intragluteally, and within a few minutes the bleeding suddenly ceased. After a period the packing was gently removed, first from one side and then from the other, and upon inspection not a sign of clot was to be seen in the nostrils. The result seemed like magic. Since this experience, "Hemostatic Serum", "Coagulen-Ciba" and "Clauden", in addition to morphine and pituitrin, are always kept at hand.

Morphine is a very useful drug in cases of bleeding, for, if nothing else, it allays the patient's anxiety, and, should the patient be restless after a general anæsthetic, it generally prevents bleeding by keeping the patient quiet. However, when used in such an instance, the patient should be carefully watched for concealed bleeding. Continual swallowing by the patient will warn the observer of this complication. When discovered, it should be corrected without delay.

Mention has already been made that atonic conditions very often cause continuation of bleeding, especially venous and capillary, and therefore any line of treatment which will tend to correct this condition should be instituted. One method is to get the patient up onto his feet and even to make him run up and down. The patient should not be allowed to lie down. In treating a patient with delayed post-operative or secondary hæmorrhage, which almost always occurs after the patient has left hospital, it should be recognized that it is to everybody's advantage to treat the patient away from over-anxious relatives. My rule is to request that the patient be taken to hospital. By the time the patient has got up, moved about and been shaken up by a motor car ride, bleeding nearly always has ceased upon arrival at hospital. If it still continues, then other lines of treatment, mentioned elsewhere, should be instituted.

Pituitrin improves the tone of vascular muscles and is of value therefore in making the bleeding time less. It is used by some surgeons in the control of post-operative hæmorrhage to the exclusion of all other preparations. One cubic centimetre for adults, given intramsucularly or subcutaneously, and from 0·25 to 0·5 cubic centimetre for children, will control hæmorrhage after head operations and give the blood time to form a clot in the bleeding vessel. If bleeding restarts, one or two further injections may be given. This drug seems to be especially useful in slow bleeding or capillary oozing.

So far as local applications are concerned, perchloride of iron, iron alum *et cetera* are excellent styptics and may be applied to the bleeding surface with some benefit when the bleeding is capillary in type and slight.

Blood transfusion as a last resort may be the means of saving the life of a bleeder, but so far it has never been needed in my practice.

When hæmorrhage is associated with an operation, two factors to be considered are faulty technique and deficiency in blood coagulation; and nose and throat operations follow this rule, with an added one, that in these operations large areas are left with raw surfaces. Because of this, nose and throat operations are more frequently associated with hæmorrhage than those performed by the general surgeon.

However, operative technique and pre-operative and post-operative management in all branches of surgery have improved so much of late that the question of "bleeding", during and after operation, is not of such importance as it was fifteen or twenty years ago and earlier. The elder members of the specialty can well remember the not infrequent necessity for the surgeons to sit up all night with a bleeding patient after tonsillectomy for instance; and in some cases they sat for hours on end with a finger pressing a swab into a tonsil fossa. Fifteen to twenty years ago the question of hæmorrhage was a very important one in any operation upon the nose and throat, and very few surgeons entered lightly upon the undertaking of enucleating tonsils in adults over thirty years of age. It must be remembered that the use of suckers and intratracheal anæsthesia at that time was almost unknown, illumination was poor, and local anæsthesia was in its stage of introduction. Moreover, compared with the method of clean dissection with sharp instruments that the specialist uses nowadays, those of blunt dissection then used were crude in comparison. Likewise, turbinates were evulsed by blunt forceps or the snare, not as nowadays by cutting instruments.

When I first began practice I followed a rule of giving injections of horse serum or "Hemostatic Serum" to all patients before tonsil enucleation, and tablets of calcium lactate were given by the

mouth for a week or so beforehand. In due course it was found that this drug produced no improvement in the blood coagulability, and a synthetic solution of calcium lactate was substituted. This in turn was abandoned as of little value. Later, as operative technique and management improved, the prophylactic use of serum was gradually left out, until today it is only in the exceptional case that this pre-operative preparation is found to be necessary. It is advisable always to inquire whether the patient has had any excessive bleeding following teeth extraction or injury, and whether there is a family history of bleeding. If there is any suspicion of deficiency in blood coagulability, the blood coagulation time and the bleeding time should be estimated, and the patient's blood should be prepared for operation by one of the several methods which have been described. With experience the surgeon can recognize while operating, by the type of blood escaping from the wound, whether the patient has some deficiency in coagulability and, if so, he should then order subcutaneous or intramuscular injections of whatever preparation he favours. It is an essential part of surgical technique to see that all bleeding has been controlled before the patient leaves the operating table. Arterial bleeding is readily seen and dealt with, whereas venous oozing may cause much trouble and may be difficult to check at times, because of the fact that a patient lying down bleeds more freely from head and neck wounds than if he be in the upright position. Because of increased congestion he tends to bleed more when under a general anæsthetic, especially with ether or after a large dose of an analgesic drug, such as one of the many barbiturate preparations which have flooded the market of late, has been given in the pre-operative preparation. I have stood by for an hour and a half and longer, with the patient under general anæsthesia, watching a surgeon of repute trying to obtain a dry field of operation. In such an instance the patient will cause anxiety to the surgeon upon his return to bed and until he has regained consciousness. When operating under local anæsthesia, or rather a form of synergetic analgesia, I prefer to have the patient in the prone position. A little more bleeding is encountered at the time than if the patient were in a "sitting up" position. However, the patient walks back to bed whenever feasible, and especially after tonsillectomy sits propped up in bed and remains so for some hours. After local anæsthetic solution has been infiltrated around a tonsil there is very little bleeding during the operation, but it is more frequently met with some while afterwards, when the constricting effect of the adrenaline of the solution upon the blood vessels has subsided. Therefore for some years now the "Novocain" or "Percaine" and adrenaline solution has been injected as far away as possible from the actual area to be laid bare. This produces a constriction of vessels at a distance from the field, and I have assumed that longer clots fill the ends of the vessels and that these are more likely to hold when the effect of the adrenaline has worn off. It is advisable to secure and tie off all bleeding points, and in this respect it is better to err on the over-cautious side than to leave a possible bleeding point on the plea of saving time.

Personal experience has taught me that it is certainly a great saving of time and trouble to deal with a post-operative bleeding when first reported than to leave it until the patient has become frazzled and apprehensive and the nursing staff worried and over-anxious.

Three points should be stressed which I feel are not so commonly recognized as their importance deserves. In the first place faulty technique is the commonest cause of post-operative bleeding. Secondly, bleeding not infrequently appears coming from beneath a clot. It is essential to remove this clot before one can successfully deal with it. Removal of the clot by wiping off in bleeding from a tonsil bed or, in bleeding from a nose, by washing out the clot or sometimes by simply blowing out the clot, may cause cessation of bleeding by allowing clots to form in the ends of the bleeding vessels. Thirdly, the placing of the patient in an upright position after a nose or throat operation is a big factor in the prevention of bleeding from small veins, which are the vessels mainly responsible. In such a posture the patient's blood pressure may be decreased, the "tone" of the cut ends of the vessels is increased, thereby more readily aiding constriction. Moreover, there is less head of pressure of venous blood above the bleeding points. These three factors tend to bring about a cessation of the bleeding. Therefore, whenever feasible, the post-operative position of choice is the upright one.

The factors concerned in post-operative bleeding are for the most part technical, and by rigidly following the rules of preparation, gentle surgical handling and after-care, post-operative bleeding is practically not encountered in my practice. I believe that if these rules have been grasped and are adopted by those who in the past have not done so, there will be much less cause to worry in the future because of bleedings after nose and throat operations.

Acknowledgement.

I wish to thank Dr. J. V. Duhig and Dr. G. C. Taylor for the elucidation of certain points in connexion with the theoretical aspect of blood coagulation.

Reference.

(1) R. V. Christie and G. L. Gulland: "Studies in Blood Coagulation and Hæmophilia; Treatment of Hæmophilia", *The Quarterly Journal of Medicine*, July, 1927, page 499.

LABORATORY INVESTIGATION OF SUSPECTED PSITTACOSIS.

By F. M. Burnet,
Walter and Eliza Hall Institute of Medical Research, Melbourne.

From the point of view of establishing a bacteriological diagnosis of psittacosis in a suspected human case of the disease it is necessary to demon-

strate the virus either in blood or sputum from the patient and in the organs of the bird suspected of being responsible for the infection. Blood is only infective when taken within the first three days of illness, and, except perhaps in the later cases of a local outbreak, will rarely be available for diagnosis. It should be citrated or heparinized to prevent clotting, and injected as soon as practicable into mice intraperitoneally in an amount of 0·5 cubic centimetre.

Sputum is often difficult to obtain and, when obtained, is not necessarily from the site of infection; also it very frequently contains pneumococci and other bacteria pathogenic to mice. Filtration is usually useless, and probably the most satisfactory technique is to emulsify the sputum in sufficient nutrient broth to allow it to pass readily through a hypodermic needle and to inoculate mice intraperitoneally with this emulsion, say three mice with 0·5 cubic centimetre and three with 0·05 cubic centimetre.

If the suspected bird is available it should be handled with great care to avoid inhalation of dust from the feathers and fæces, and preferably drowned immediately in a solution of some weak antiseptic. The body cavity is opened with aseptic precautions and note made of any lesions present. In acute psittacosis of cockatoos, subacute pericarditis and inflammation of air-sac linings are almost invariable. From the semi-purulent lymph, smears should be made and stained by Castaneda's method. The liver is usually enlarged and flabby, with usually some variation from the normal colour; it may be brownish-green or, more rarely, may have yellowish necrotic patches. The spleen is usually moderately enlarged, and should be removed for inoculation into mice. For this purpose it is ground with a little sterile quartz powder or sand and two cubic centimetres of broth or saline solution. After the abrasive has been allowed to settle, quantities of 0·5 cubic centimetre are inoculated intraperitoneally into mice.

The mice should be kept under conditions which will minimize the possibility of infecting the workers in the laboratory. Individual glass jam jars with perforated screw tops for each mouse are satisfactory. If pneumococci are present in the sputum, the mouse will die within three days and may be discarded. If it survives any bacterial infection, psittacosis may be manifested by signs of sickness in the mouse from four days onward. It should be killed as soon as it is obviously sick, and the abdominal cavity examined. Subacute peritonitic lesions with fibrino-purulent accumulations in the subphrenic regions and around the spleen are characteristic of Australian strains of psittacosis. Only very rarely are necrotic patches on the liver to be seen. The spleen is enlarged to a variable extent. Smears should be made from the inflammatory exudate and stained by Castaneda's method. The stain is prepared as follows:

Phosphate buffer solution (pH = 7·0) ..	95 c.cm.
Formalin	5 c.cm.
Löffler's methylene blue	10 c.cm.

Smears are stained with this for two minutes, without preliminary fixation, washed with distilled water, and then counterstained with 1% aqueous safranin. Examined under the oil immersion lens, the specific psittacosis bodies (L.C.L. bodies) appear as blue granules, about 0·3μ in diameter, mostly in small clumps within mononuclear cells. In a properly stained smear all other components stain pink. Bacteria also stain blue in many instances, but are easily recognized by their size and shape.

If mice do not appear sick by the tenth day, it is advisable to kill and examine them. If nothing abnormal is visible and the spleen is not enlarged, they may be considered uninfected. If the spleen is enlarged and there is a suspicion of peritoneal exudate on some of the peritoneal folds around the lesser omentum, but no L.C.L. bodies in smears, it is advisable to emulsify the spleen and subinoculate it into two fresh mice. Cultural tests of the spleen should be made at the same time. If the virus is present, this second mouse passage will give typical findings.

The virus is readily inactivated, and if material has to be sent some distance to the laboratory, it is advisable to pack it with ice, preferably in a thermos flask, during transit.

Reports of Cases.

A LOCAL EPIDEMIC OF HUMAN PSITTACOSIS IN AUSTRALIA.

By Frank C. H. Ross, M.B., B.S. (Melbourne),

and

Louis Rabinov, M.B., B.S. (Melbourne), D.G.O. (Dublin).

The seven cases reported here in detail constitute the first epidemic of psittacosis so far proven in Australia. Infection with the virus of psittacosis (*Rickettsia psittaci*) has been known to exist in Australian native birds for some time. Occasional isolated cases of psittacosis have been suspected; but they all lack bacteriological proof.

The salient features of this group of cases include many features common to epidemics in other parts of the world. In every case close contact with sulphur-crested cockatoos occurred. Some of the birds were sick and were later proven to be infected with the virus of psittacosis.

Briefly the illness presents the features of an atypical bronchopneumonia in which the lung signs are more extensive than the patient's symptoms lead one to expect, and in which the temperature reaction is excessive even early in the course of the infection. The onset is almost influenzal in type, malaise, severe headache and some diarrhœa being common symptoms at this stage.

The headache is not localized to any part of the head, but is so severe that the patient calls in medical attention relatively early.

The majority of the patients had at the onset some diarrhœa, the bowel actions being four or five per day, the motions loose and even watery; in one case the stools were blood-stained.

Although vague malaise is characteristic of the onset and although some of the patients presented a mental

ILLUSTRATIONS TO THE ARTICLE BY DR. F. C. H. ROSS AND DR. L. RABINOV.

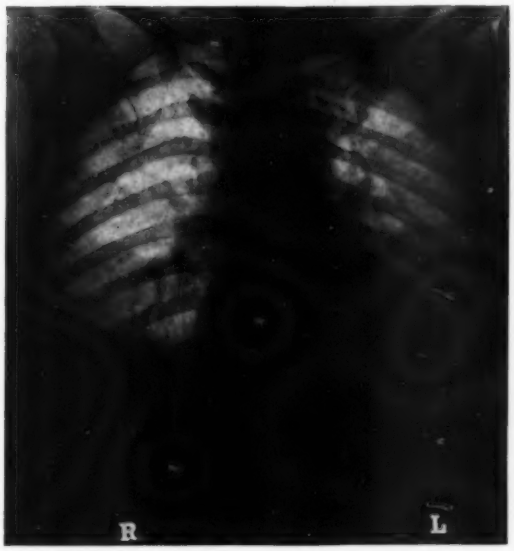
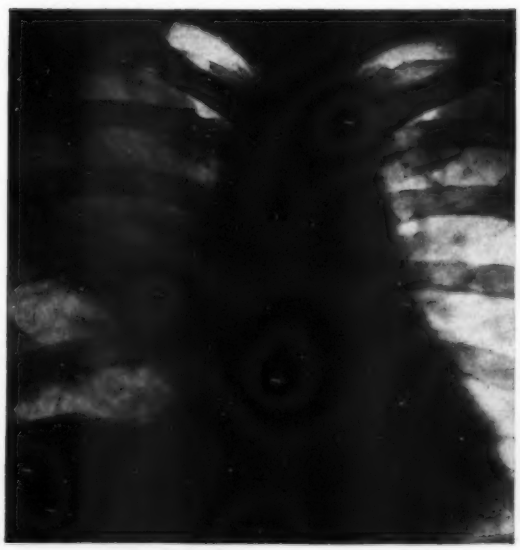


FIGURE I.

FIGURE II.

ILLUSTRATION TO THE ARTICLE BY DR. G. J. KENNEDY.



Skiagram taken from patient Mrs. M.

ILLUSTRATIONS TO THE ARTICLE BY DR. J. G. EDWARDS.

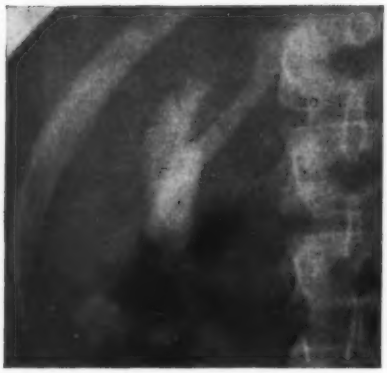


FIGURE I.

FIGURE II.

ILLUSTRATIONS TO THE ARTICLE BY DR. RICHARD FLYNN.

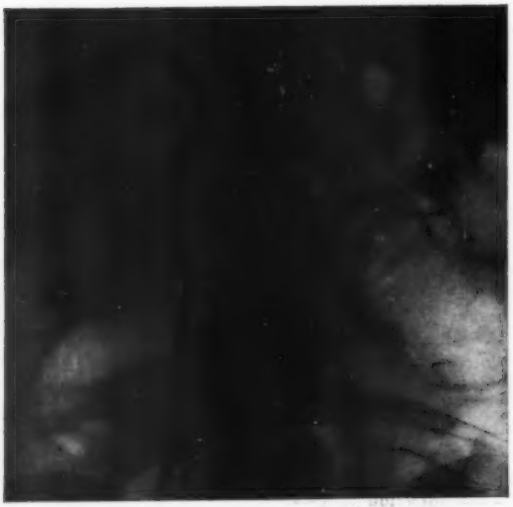


FIGURE I.

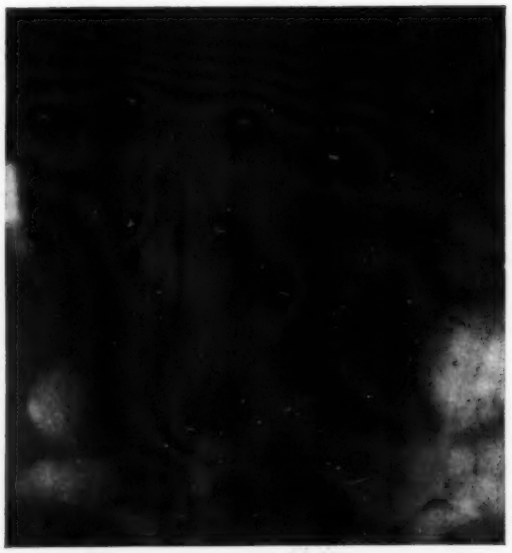


FIGURE II.

state resembling that in a case of typhoid in its third week, throughout the illness the patients with psittacosis had a sense of well-being out of all proportion to the extensive lesions found on examination of the chest.

The temperature is high when the patients are seen, 40° C. (104° F.) being common in the first few days. The temperature remains high, without intermission, and may persist for some weeks. The tongue is heavily furred early in the illness.

The chest may be clear early; but dulness and diminution of breath sounds develop and extend for some days or weeks. Moist sounds develop; but there is no sputum or pleurisy—a marked contrast to other varieties of lung consolidation.

Case Histories.

CASE I.—A.B., a male, aged twelve years, reported on December 2, 1935, complaining of headache and diarrhœa—three bowel actions during the day. The temperature was 39·4° C. (103° F). Physical examination showed no abnormality. Two days later slight cough developed without sputum. The patient remained febrile for seven days, but felt well throughout his illness.

CASE II.—A.B., a female, aged thirty years, mother of the patient in Case I, was first seen at her home on December 4, 1935, complaining of severe headache, aches and pains all over the body, and slight looseness of the bowels. There was a slight cough, and her mental condition could best be described as lethargic. She would only answer questions, and then slowly and in a dull fashion. The temperature was 40° C. (104° F.), the pulse rate was 120, and the respiration rate 28 per minute. Examination of the chest showed no abnormal physical signs. The throat was clear.

On December 5 she still complained of extremely severe general headache, and was very lethargic and shivered on several occasions. A slight cough developed and the temperature reached 40·8° C. (105·4° F.). Examination of the chest showed diminished breath sounds at the right base. Next day looseness of the bowels with watery, blood-stained motions and a definite rigor occurred. Moist sounds were heard for the first time at the right base.

In the course of the next few days a dry, irritating cough developed and the chest became dull all over the right base. The headache disappeared by the fifth day of the illness and the patient felt well, although looking extremely ill, the temperature being 40·6° C. (105° F.) and the respiration rate 40 per minute. By December 15 diarrhœa had ceased and retention of urine occurred. Two days later extensive signs developed at the left base. Throughout the illness the patient was disinclined to talk, appeared lethargic and, when roused, spoke with difficulty. The temperature fell by lysis, reaching 35·9° C. (98·6° F.) by December 20, the twentieth day of her illness (see accompanying chart).

There was no reaction to the Widal test for typhoid, paratyphoid *A* and *B*, and *Brucella abortus* infection. X ray examination of the chest showed a diffuse pneumonia on the right side.

CASE III.—Mrs. C., aged fifty-six years, purchased a sulphur-crested cockatoo from the patient in Case II four weeks previously. This bird died on December 11, 1935.

On December 4, 1935, Mrs. C. reported with headache and vomiting, some coughing, and pain in the left side of the chest of pleural type. The temperature was 38·3° C. (101° F.). Examination of the chest revealed a few moist sounds at the left base, with extensive dulness to percussion. No pleural rub was detected.

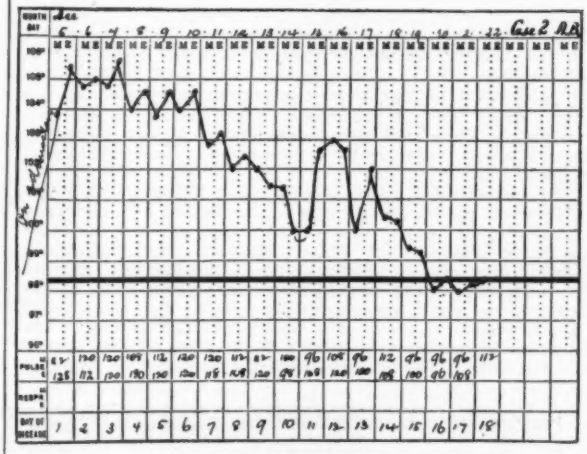
This patient had no bowel upset, but she had marked vomiting and a furred tongue. The fever persisted for ten days. The patient felt well throughout the illness in spite of the signs at the left base.

CASE IV.—On December 7, 1935, F. McD., a female patient, aged sixty-two years, a widow, was seen. She complained of feverishness, headache and diarrhœa of one day's duration. Questioning elicited the fact that she had suffered from diarrhœa for an indefinite period, which was considered to be due to a deficiency in gastric hydrochloric acid. On examination the patient looked very ill; her temperature was 39·0° C. (102·2° F.), the pulse rate was 160 and the respiration rate 28 per minute. Chest examination revealed relative dulness on percussion at both bases, associated with a few crepitations, but no signs of consolidation. She was transferred to hospital for observation. Pyrexia continued, the temperature reaching its maximum of 39·8° C. (103·6° F.) two days later, after which it fell by lysis, with a temporary rise to 39·2° C. (102·6° F.) on the ninth day, from when it fell rapidly to normal by the thirteenth day.

On the fourth day signs were present of acute bronchopneumonia, with patches of consolidation at the right base and fairly extensive involvement of the lower half of the left lung. There was no cough or expectoration or pain in the chest. The diarrhœa had ceased and, despite her appearance of severe illness, the patient volunteered: "Feeling very well."

At the earnest request of her relatives, the patient returned home on the ninth day of her illness. Next day she suffered from abdominal distension and suppression of urine. She was obviously very ill and the pulse was intermittently irregular. These signs soon disappeared, and by the sixteenth day there was little abnormality to be found by physical examination, other than signs of congestion at both bases.

Sputum, which was absent in the early stages of the illness, was always scanty, but a specimen obtained for examination on the twelfth day of the illness was forwarded to Dr. F. M. Burnet, of the Walter and Eliza Hall Institute, Royal Melbourne Hospital, Melbourne, for examination, and was later found to contain the virus of psittacosis.



Temperature Chart, Case II.

It had been reported to one of us (L.R.) on the ninth day of the illness that a sulphur-crested cockatoo had died at the home of the patient, the bird having been purchased from a man whose wife was under the care of Dr. F. C. H. Ross, suffering from a symptom complex similar to that described above (see Case II). This bird had been noted to be suffering from diarrhœa and had been cared for, fondled and kissed by the patient (F.McD.). The cockatoo had been in the care of the patient for six days prior to the onset of her illness, on the third day of which the cockatoo died. In the same aviary were several other birds, including a rosella parrot, which subsequently died from a disease in which diarrhœa was a prominent symptom. It was known to the family of the patient that there had been a notable fatality recently amongst the birds of the aviary from which the cockatoo had been purchased.

Subsequent examination of the sputum of the patient, as has been mentioned above, showed the case to be a human infection of psittacosis.

The peculiar features of the case are: (i) a human infection of psittacosis from a sulphur-crested cockatoo; (ii) the patient had ample opportunity of infection and developed first symptoms six days after first contact with the infected bird.

CASE V.—C., a male, aged fifty-six years, a seaman, on December 11, 1935, complained of a vague illness associated with diarrhœa. He landed at Sydney and was admitted to hospital with pneumonia—now suspected as psittacosis. This patient has not been examined by us, but is the husband of the patient in Case III and was in close contact with the cockatoos that died of psittacosis.

CASE VI.—B.B., aged three years, daughter of the patient in Case II, reported on December 16, 1935, with cough for some days. The temperature was 37·8° C. (100° F.). There were a few signs at the bases of both lungs—râles and crepitations. The fever subsided in two days.

CASE VII.—W.C., aged eighteen years, a son of the patients in Case III and Case V, reported on December 23, 1935, suffering from severe headache of two days' duration. There had been no cough and the patient felt well. The temperature was 39·4° C. (103° F.) and the pulse rate was 88 per minute. The chest was dull to percussion all over the left base, and there were showers of crepitations. The tongue was heavily furred.

Radiological Appearances.

The following reports on the radiological appearances were made by Dr. John O'Sullivan.

CASE II.—The radiograph shows an area of increased density at the base of the left side of the chest. The finding is consistent with a pneumonic process at the base of the left lung. In the absence of a lateral view it is not possible to exclude the presence of fluid in this situation.

CASE IV.—The film shows a mottled infiltration in the right upper part of the chest. The appearances are consistent with a bronchopneumonic process in this situation. There is also evidence of involvement of the right lower part of the chest.

Dr. O'Sullivan also wrote as follows: "A consideration of the above radiological findings in definitely proven cases of psittacosis with pulmonary involvement is very interesting. The view has been expressed that there is a characteristic radiological picture of psittacosis of the lung. The varying appearances in the above films would seem to disprove this. The radiological appearances are those of a pneumonic infiltration of the mottled or massive type, with a definite tendency to pleural involvement. The condition should be borne in mind in cases running a protracted or atypical course. In infected birds in the later stages of the condition a perialveolar fibrosis has been found. It is proposed to make further skiagrams of these patients to ascertain if there is any radiological evidence of this change in the human lung."

Summary.

1. A group of seven patients is presented, in whom the signs and symptoms of psittacosis have been confirmed by the finding of the virus of psittacosis in the sputum of at least one of the patients.

2. All the patients were in close contact with sulphur-crested cockatoos, some of which had been sick and some had died. Infection with the virus of psittacosis has been proven in many of the birds of this aviary.

3. The symptoms and signs of psittacosis in this group of patients are those of an atypical pneumonia, in which the temperature is very high, the headache is severe, and the signs in the chest are more extensive than the patient's symptoms would lead one to expect.

Acknowledgement.

The bacteriological work has been carried out at the Walter and Eliza Hall Institute under the direction of Dr. F. N. Burnet.

PSITTACOSIS IN MAN.

By G. J. KENNEDY, M.B., B.S. (Melbourne),
Cobram, Victoria.

IT is considered that the following case history is worthy of reporting as being the first case of psittacosis in the human in Australia in which the clinical diagnosis has been confirmed by the demonstration of the virus of psittacosis in the sputum of the patient and in the spleen of certain of the budgerigars of her aviary.

Mrs. M., aged thirty-five years, first sought advice on November 16, 1935, the second day of her illness, which had commenced with generalized pains and shivers. At the first examination it was noted that her temperature was 40·3° C. (104·6° F.) and pulse rate 120 per minute. She was drowsy and cyanosed. At the base of the right lung the breath sounds were diminished and a few fine crepitations were detected. On November 17 she was restless. She had had a fainting turn during the night. The temperature was 40·6° C. (105° F.). A small patch of high-pitched breathing was detected at the right hilar region. On November 18 she was admitted to hospital. Her temperature thereafter was as recorded on the chart.

The area of high-pitched breathing increased in size. A hard unproductive cough developed and induced headache. Rose-coloured spots, about 2·5 centimetres (one inch) in diameter, appeared on the back of her thorax. During the next few days her cough was very troublesome, especially on movement or on deep inspiration; but she produced no sputum. The cough was like that due to an effusion. Herpes appeared on the lips and nose on November 20. On November 21 an X ray picture was taken. Its appearance is discussed later. On November 23 excessive salivation was noted. On November 25, the eleventh day of her illness, ægophony was present over the right hilar region and there was some high-pitched breathing over the area of crepitation at the base of the left lung. Her cough was very troublesome. The right pleural cavity was needled, but no fluid was obtained. Slight hæmoptysis followed. On November 26 ægophony was present over both hilar regions, more marked on the right, and crepitations were heard at both bases. The cough and cyanosis persisted. Administration of "Carbogen" gave no relief. Thereafter her temperature gradually fell, the cough became less troublesome, the chest signs slowly cleared up, but ægophony and moist sounds remained at the bases until the first week in December, as her general condition slowly improved.

The following unusual features in the clinical picture were noted: (i) irritative cough suggesting an effusion; (ii) absence of headache in the early stages (the headache appeared to follow bouts of coughing); (iii) almost total absence of sputum, although auscultation suggested that sputum would be produced; (iv) excessive salivation; (v) drowsiness suggestive of typhoid fever; (vi) cyanosis of a peculiar violet tint; (vii) inhalation of "Carbogen" did not afford the relief usually experienced in influenzal conditions.

The patient and her husband have an aviary of about one hundred birds, of which sixty are budgerigars and five parrots. In August, 1935, her husband had a mild attack of fever suggesting influenza. At that time several young birds were sick. No birds had died during the two months previous to the patient's illness. On the twelfth day of her illness a sick bird was discovered in the aviary. This bird was killed and sent to the Walter and Eliza Hall Institute in Melbourne, but *post mortem* changes had advanced too far for culture. The spleen was enlarged and a smear probably contained L.C.L., though only one infected cell was found. On December 1 four budgerigars, two blue and two green, were sent alive to the Walter and Eliza Hall Institute and there killed. Both green birds were normal, but in both blue birds there were slight thickening of the air sac membranes and enlargement of the spleen. The spleens from the blue birds were pooled and mice inoculated with emulsion prepared therefrom. Both mice became sick in nine days and the bodies specific for psittacosis (L.C.L. bodies) were seen in the smears. The liver from one mouse was inoculated into two more mice. Both these mice became sick in four days with psittacosis.

On November 30 the patient produced a small amount of sputum. This was dispatched to the Walter and Eliza Hall Institute in a thermos flask packed in ice. Examination there showed some mucus and white nodules. Microscopic examination showed a few Gram-positive cocci. The sputum was ground with quartz, five cubic centimetres of broth were added, and the emulsion was centrifuged. Two mice received 0·5 cubic centimetre of the supernatant fluid intraperitoneally. Ten days later one mouse was killed, and examination revealed a very enlarged spleen. Examination of smears revealed no L.C.L. bodies. An emulsion was made from the spleen and two mice were inoculated therewith. Both these mice became sick on the sixth day. One died then, and L.C.L. bodies were found in the spleen. The second mouse was killed and L.C.L. bodies were again found in the smear from the spleen. The liver from this mouse was emulsified and inoculated into two more mice and into two eggs, and in both cases typical lesions of psittacosis developed.

X Ray Report.

The following report on an X ray film in this case was made by Dr. John O'Sullivan.

The film made shows an increased density in the middle third of the right side of the chest. The findings are consistent with a pneumonic process in this situation. In the region of the hilum the appearances are very suggestive of an interlobar effusion. Owing to the condition of the patient it was not possible to take a lateral view. This view would have been of value in visualizing the interlobar space.

Acknowledgements.

Investigations at the Walter and Eliza Hall Institute were carried out by Dr. F. M. Burnet and Miss D. Lush, to whom I am indebted for the details of laboratory technique.

"FOLDED" GALL-BLADDER.

By J. G. EDWARDS, M.B., Ch.M. (Sydney),
Honorary Radiographer, Sydney Hospital.

THE illustrations on the special plate show a condition of the gall-bladder which is not uncommonly seen in cholecystography; this may be called a "folded" gall-bladder.

In the postero-anterior film there can be seen an irregular density of the gall-bladder shadow. If the patient is then turned over and rotated about 45° to the right and an oblique film is taken, it will be seen that the peculiar gall-bladder shadow resolves itself into a long shadow folded acutely on itself.

This condition has generally been looked upon as being due to pericholecystic adhesions, but in an article appearing in the *American Journal of Roentgenology* of May, 1935 (Volume XXXIII, Number 5), by Edward A. Boyden, it would seem that this condition is really a congenital anomaly; he describes many such cases which have been investigated by him. Several cases were seen in young people.

This condition is quite consistent with efficient gall-bladder function, and its discovery does not necessarily mean that a pathological lesion of the gall-bladder is present.

GUNSHOT WOUND OF THE KIDNEY.[1]

By RICHARD FLYNN, B.A., B.Sc., M.D. (Sydney), M.S. (Minn.), F.R.A.C.S.,
Honorary Surgeon, Lewisham Hospital, Sydney; Honorary Assistant Surgeon, The Royal Prince Alfred Hospital, Sydney; Tutor in Surgery, University of Sydney.

T.P., A MALE, aged sixteen years, was admitted to the Royal Prince Alfred Hospital on August 30, 1934, at 8.30 p.m.

The story he told was that he had accidentally been shot in the back with a cartridge of a ·22 pearifle at about 4 p.m. The rifle had been fired at a distance of about ten yards. After the accident he had run home, a distance of about half a mile. He had vomited bright red blood twice and had not passed any urine. He stated that he had lost a good deal of blood from the gunshot wound of entry in his back. He had no cough.

[1] The patient described herein was shown at a meeting of the New South Wales Branch of the British Medical Association on May 23, 1935.

On examination he was pale and somewhat sweaty, and he looked shocked. The pulse rate was 125 per minute and the volume was poor. The temperature was subnormal. There was a clean puncture wound on his back about 7·5 centimetres (three inches) from the spine and opposite the eleventh rib. There was no wound of exit. His abdominal muscles were on guard, and a diagnosis of an acute abdominal condition was made. Plain X ray films in the antero-posterior and lateral planes were made to locate the bullet. These showed the bullet to be in the abdomen, just under the anterior abdominal wall. A catheter specimen of urine contained profuse blood. Under gas and nitrous oxide anæsthesia laparotomy was done through a left paramedian incision. There was a considerable amount of blood in the peritoneal cavity, which was sucked and sponged out as quickly as possible. The bullet was felt during exploration, but slipped into the left paracolic fossa. A perforation was found in the anterior wall of the stomach, which was dealt with in the usual way. Then the lesser sac was opened through the gastro-colic omentum and the stomach was turned over onto the chest wall and another bullet hole was found in the posterior wall high up near the œsophagus. This was sewn over and invaginated with difficulty. The small and large bowels were examined, but no further perforations were found. On the left side a large retroperitoneal hæmorrhage was found, but it was deemed safer to leave it alone for fear of restarting the hæmorrhage by lowering the surrounding pressure. A stab wound to the left of the incision was made and a soft rubber tube was inserted into the peritoneal cavity for drainage. The bullet was removed and the patient was given a transfusion of 600 cubic centimetres of citrated blood on the operating table, and was returned to the ward in fairly good condition.

He was allowed nothing by mouth for the next two days, his fluid intake being maintained by subcutaneous injections of saline solution. His urine remained blood-stained for five to six days, and his temperature was raised in the evening to 37·8° to 38·3° C. (100° to 101° F.). About fourteen days after operation there was a copious discharge of pus through the abdominal wound, which was taken as evidence that the retroperitoneal hæmatoma had been infected from the descending colon, the blood supply of which had been interfered with. His subsequent convalescence was uninterrupted.

After study of the line of the bullet, and also taking into consideration the size of the retroperitoneal hæmatoma, it was considered that the left kidney must have been seriously damaged, so an intravenous urogram was prepared. It showed that the opaque substance had infiltrated out through a wound in the upper calyx into the perirenal hæmatoma. A retrograde pyelogram was prepared on September 20, 1934 (Figure I), and showed that the sodium iodide had dispersed irregularly into the surrounding hæmatoma from the upper calyx of the left kidney.

Cystoscopy was again carried out on November 2, 1934, and indigo-carmine was given intravenously and appeared from both catheters within five minutes; it was strongly concentrated, giving excellent blue colour from both sides.

Microscopic examination of urine from both kidneys showed absence of pus cells from both specimens, and on culture both specimens were sterile. A left-sided pyelogram was done, and interpreted as indicating some infiltration into the tissues from the upper major calyx. This infiltration was not nearly so marked as in the skiagrams seen previously.

I saw him again on March 20, 1935, and examined his bladder again with the cystoscope. His left kidney function was not at all diminished, as judged by the result of an intravenous indigo-carmine test. A left-sided pyelogram showed that the lesion had diminished to a very small size (Figure II).

The case is reported with a copy of the pyelograms because the opportunity for studying the healing of a wound in the kidney is seldom available.

TUBERCULOUS MENINGITIS WITH RECOVERY.

By Bertrand A. Cook,
Boorowa, New South Wales.

Nola H., a female, aged three and a half years, was seen on June 3, 1935. She was drowsy, had headache, constipation, a temperature of 40° C. (104° F.), and was vomiting. She would not rest unless someone held her, as she had the sensation of falling through the bed. This symptom persisted for four weeks. On the second day, after a quiescent period, she had maniacal screaming which had to be controlled with morphine. On the third day rigidity developed, with slight head retraction, together with the presence of Kernig's and Brudzinski's signs, with absence of knee jerks. A lumbar puncture was done and clear fluid was obtained under very greatly increased pressure. A fine lymph clot settled on standing. Cells were very numerous, mostly lymphocytes; but no tubercle bacilli were noticed in the specimen sent to a pathologist. Spasms, which were very distressing, were greatly relieved by the puncture. The urine had a specific gravity of 1010, the reaction was neutral, and albumin and pus were present. Dermatographia was well marked by the end of the first week. In the second week respiratory and cardiac embarrassment became marked, and cyanosis was a feature added to the previous clinical picture. This symptom was under control by the usual drugs, "Coramine" *et cetera*, and continued at intervals for several weeks. Emaciation became pronounced and feeding became a big problem on account of vomiting, but artificial feeding appeared to tide the patient over a difficult period until vomiting became controlled, which was at the end of the following week.

The fourth week was featured by cystitis, and this looked as if it might determine the issue fatally, especially as the bony points were very angry-looking, and ended in one case in a pressure sore. The fifth week was more hopeful, on account of the lessening of fever and a disposition to take food more regularly, and about this time the cystitis began to clear up. The patient also was less spastic and slept better. A slow but steady progress along these lines was maintained for three weeks, when convalescence was established, and the patient first got out of bed eleven weeks after the commencement of the illness. Seen today, January 21, 1936, seven and a half months after the onset of the disease, the patient appears to be cured. She is very active and mischievous, eats well and sleeps well and weighs 21·1 kilograms (three stone five pounds). Knee jerks are not active, but I can find no other sign of her having had such a trying illness.

Treatment was largely along symptomatic and general lines, with a few other features that are worthy of note. Ephedrine, 0·01 gramme (one-sixth of a grain), was exhibited twice daily from the outset, as well as hexamine. Ephedrine was used empirically, following the lead of others who have used it successfully in cases of infantile paralysis. Its value in a single case cannot be estimated, but I feel encouraged to use it in the next similar case that I may come across. Phenacetin appeared to be of great help in keeping the patient steady. Hexamine was pushed to the point of renal irritation on account of its value as a urinary antiseptic and its (less certain) value as a cerebro-spinal antiseptic. The reaction of the urine became acid after the first week and remained so.

Comment.

1. The condition was one of tuberculous meningitis.

2. The route of infection is uncertain, but I am inclined to think the child was infected from the father, who is a chronic pulmonary tuberculous patient with an open cavity. He is very careless about expectoration. Incidentally, he has a severe grade of diabetes also, taking 60 units of insulin daily for stabilization. Several months before the latest illness of the child I had her under observation with suspicious adventitious chest sounds, and she gave a positive response to the Mantoux test. I suggest that her cerebro-spinal infection was via a Ghon's tubercle, in harmony with current theories.

Reviews.

ANÆSTHESIA IN GENERAL PRACTICE.

"Problems of Anæsthesia in General Practice", by Dr. D. H. Lukis, is the successful essay for the Sir Charles Hastings Prize of the British Medical Association for 1934.[1] It is an interesting and unusual little volume, based on a review of ten years' experience of anæsthesia in public hospitals and general practice. The author reports more than 5,000 administrations of various anæsthetics. Although a high percentage of these were for minor operations, he is to be congratulated upon experience wider and more varied than falls to most non-specialist anæsthetists. He is to be further congratulated upon keeping records, in which necessary but tedious occupation even specialist anæsthetists are too often remiss.

The busy practitioner, seeking guidance in epitome as to the handling of a particular patient or details of a given technique, may consider this volume discursive. On more leisured reading, however, its value will become clear. The author makes little attempt to describe technique. He deals, rather, with such problems as the scope and equipment of the non-specialist anæsthetist, the technical methods best suited to his needs, the assessment of the anæsthetic risk, the comparative value of various anæsthetics, the care of the patient before and after the operation. He is well abreast of the times in the literature and practice of anæsthesia. His views are sane and practical, as is fitting in a work addressed to the general practitioner. They are illustrated by personal statistics which, though they perhaps reveal nothing new, yet give his reasoning more weight than it would derive from mere clinical impressions, however forcefully enunciated.

We can recommend this little book to every general practitioner who takes a serious interest in the anæsthetic work which falls to his lot. The senior student will find it a practical supplement to his technical text-book. The specialist anæsthetist (to whom Dr. Lukis is somewhat unkind) will likewise gain from reading it, were it only for the emphasis which is placed upon the human (as opposed to the technical or mechanical) side of the relationship between anæsthetist and patient.

TROPICAL DISEASE.

In their book, "Clinical Parasitology and Tropical Medicine",[2] the authors, D. and C. T. de Rivas, have attempted to compress into the small compass of 353 pages the essentials of two large branches of medicine. The writer of such a text-book is faced with the difficult task of effecting a judicious compromise between the mere summary and the discursive treatise. He must not only make a careful selection of what matter to include, but, having made that selection, he must be concise in his manner of presentation and limit his literary dressing to conform with the need for brevity and yet maintain a sufficiently easy flow in the text for continuous reading. The writers of the present volume have been conscious of the difficulties of selection, but have not met them in a matter that will be acceptable to all tropical practitioners. As is traditional, the volume commences on an historical note, and even in a book of these small dimensions we should perhaps not begrudge them their "Ebers Papyrus", their fiery serpents of Moses, nor yet their passing speculations on the origin of biblical prohibitions, if we had found the work complete in what we consider essentials. Surely a book which includes the words "tropical medicine" in the title should at least mention two such important subjects as tropical ulcer and *lymphogranuloma inguinale*. Speculations on the writers' possible reasons for these omissions have only led us to the conclusion that the authors forgot to include these conditions.

In the chapters dealing with the dysenteries there are some statements that are difficult to accept. On page 81 one reads that the stools of bacillary dysentery contain relatively little mucus, whereas it is common experience in the tropics that the acute bacillary stool in its typical form consists almost entirely of blood-stained mucus. Again, the statement that Shiga's bacillus is now considered the most important, if not the only, ætiological factor in bacillary dysentery will come as a shock to those who have had experience of epidemics of bacillary dysentery in countries where Shiga's bacillus is rarely or never encountered, and particularly to those who are accustomed to finding Flexner group bacilli in almost pure culture in bacillary stools and to isolating them from the submucosa of the bowel at autopsies in fatal cases. Serum therapy of the disease is dismissed in a line, which indicates the authors' small faith in its efficacy, a view that will not be shared by most clinicians. It must be admitted, however, that some statistical evidence on the matter would be welcomed by those with scientific scruples.

In the chapter on malaria the following passage (page 118) occurs: "Clinical experience shows that the patient suffering the first attack of malaria, except in severe infestment with subtertian, usually gets well when properly treated. A second attack, however, even under careful treatment, is apt to leave permanent lesions, though not necessarily fatal; but a third attack invariably leaves permanent injuries of the nature of fibrosis, passive congestion and torpor of the liver and spleen, anemia, which though not necessarily of immediate danger may gradually lead to a fatal termination." Although it is generally agreed that a succession of malarial attacks may lead to progressive fibrotic changes in various organs, it has not been usual to presuppose grave lesions except in cases of prolonged untreated malaria; we prefer to think that the writers of the above are taking an alarmist view of the question. Malaria is certainly a disease calling for prompt and efficient treatment and should at no time be taken lightly, but one cannot readily believe that "clinical experience" is in a position to speak so positively of the permanent effects arising from a given number of attacks. Under the section on the treatment of malaria the use of quinine in the form of pills, capsules, cachets *et cetera* is discouraged. Most of us will agree that hard pills and sugar-coated tablets and the like are to be avoided, but there can be no such objection to the use of quinine bihydrochloride in gelatine capsules. These have been used with success in prophylaxis and treatment in New Guinea and adjacent islands for many years. Naturally the method is too expensive for general use in prophylaxis amongst native populations.

As regards the newer synthetic malaria remedies, the writers adopt, no doubt rightly, a very cautious attitude. "Atebrin", which they prefer to spell "Atabrine", is spoken of as being still more or less *sub judice*, both as regards its value and its toxicity. There should now be no room for doubt that it is a valuable anti-malarial drug, but the question of its toxic effects on the liver certainly demands further investigations. It might be noted here that in some recent experiments with "Atebrin", used intravenously with rabbits, Dawson, Gingrich and Hollar found that the margin of safety was small, and recommend caution in using it intravenously in man.

Blackwater fever, instead of being treated as a complication of malaria, as is now the practice of most writers, has been included in the section dealing with diseases due to filtrable viruses. The authors evidently consider it a disease *sui generis*, and although they maintain a rather non-committal attitude as regards the ætiology, they conclude their remarks on the malarial

[1] "Problems of Anæsthesia in General Practice: An Essay Awarded the Sir Charles Hastings Prize of the British Medical Association, 1934", by D. H. Lukis, M.D., B.S.; 1935. London: Hodder and Stoughton, Limited. Demy 8vo, pp. 158. Price: 7s. 6d. net.

[2] "Clinical Parasitology and Tropical Medicine", by D. de Rivas, B.Sc.Biol., M.S., M.D., Ph.D., in collaboration with C. T. de Rivas, B.A., M.D.; 1935. Philadelphia: Lea and Febiger. Royal 8vo., pp. 367, with illustrations. Price: $5.00 net.

theory by stating: "Moreover the disease sometimes attacks people who previously never had malaria." This passage is probably taken from Stitt, who, however, adds: "but such cases are exceptional". Such statements would be more impressive if some of the details of the cases were cited. Persons who hold to the malarial theory would need to be convinced that the cases were true hæmoglobinuric fever and that there had been no possibility of latent malarial infection. The wording "never had malaria" is loose and might mean clinical malaria as distinct from infection with the parasite. In the section on the treatment of the disease, the practice of blood transfusion hardly receives adequate mention. Whatever may be the opinions regarding its advisability in the acute stages of the disease, there can be no doubt that it has saved lives in those cases where profound and persistent anæmia remains when the hæmoglobinuria has cleared up. Under prophylaxis the writers sound a warning against "overdosing with quinine as a prophylactic measure or as a treatment for malaria". It would be better to stress the need for a regularly maintained system of quinine prophylaxis. Irregular dosage with quinine in persons suffering from subtertian infections seems to be the chief danger so far as quinine is concerned in the precipitation of an attack.

The chapter on filariasis contains some provocative passages. One can, of course, forgive the authors for not adopting the more up-to-date generic name *Wuchereria*, which after all is an offence to the ear; but they should be more careful with the name of the discoverer of the adult female worm, whom they designate Bancrofti. The terminal "i" will not be appreciated by the descendants of Joseph Bancroft. These, however, are minor matters. When it comes to the inclusion of *Stegomyia calopus* amongst a very restricted list of intermediate hosts, the student of filariasis begins to look askance at the whole chapter. It has been repeatedly shown that this species is particularly inhospitable towards the parasite. It may be noted too that in another section of the book the same mosquito is mentioned as *Aedes ægypti* without any indication that this is one of the many synonyms from which the insect has to suffer. The statement that "fleas, ticks and bedbugs also probably act as intermediate hosts" deserves no place in a text-book if it rests on no firmer foundation than the writers' claim to have observed partial development of microfilariæ in bed-bugs. The observation is of interest and demands further investigation, but it is a far cry from partial development to the fully grown infective larval form. Partial development is known to occur in many species of mosquito that have no just claim to be included in the list of intermediate hosts.

In discussing the phenomenon of filarial periodicity no mention is made of the non-periodic filaria of Samoa, Fiji and Tonga, and yet the writers lay great importance on the possession of a sheath as a determining factor in the phenomenon. While it is true that all periodic forms of filaria have sheathed embryos, the converse does not hold, and whatever bearing the sheath may have on the mechanism, its mere possession does not insure periodic behaviour.

Perhaps a more serious omission occurs in the chapter on schistosomiasis, where it is stated that infestation of man takes place by the ingestion of the cercariæ, no mention being made of the other well established mode of entrance by penetration of the skin during bathing in infested waters. A system of prophylaxis that disregarded such an essential feature in the life cycle would inevitably fail.

In describing the causal organism of rat-bite fever the authors follow the Japanese workers in regarding it as a leptospira, which is contrary to the established opinion in England, where Robertson and others have shown it to have the morphology of a spirillum, the accepted name in that country being *Spirillum minus*.

One of the most peculiar statements in the book is the following, occurring in the section on yaws, page 166: "Yaws rarely produces tertiary lesions." Here, as in some other parts of the book, one cannot gather whether the writers are voicing their own views in the face of contrary orthodox opinion or are merely incompletely informed. No one who has lived in some of the countries where yaws is prevalent would consider the tertiary ulcerations or the bone and joint lesions as rare phenomena.

In the authors' hands the laboratory diagnosis of leprosy becomes such a simple matter that those who have struggled with its difficulties will be filled with either hope or a healthy scepticism, according to temperament. One of the writers claims by his technique to have "arrived" at a positive diagnosis in all doubtful cases", which is evidently equivalent to saying that all doubtful cases of leprosy are leprosy. We read also that "the detection of lepra bacilli and lepra cells in the circulating blood collected from the veins of the arm, after applying the same acetic acid concentration methods as described, invariably gives a positive laboratory diagnosis". It would be regrettable if the detection of these objects could not be relied on to establish the diagnosis. We do not imply that these workers may not have had highly successful results with their method, which should be given an extended trial by all interested, but such statements, at once dogmatic and loosely worded, do not inspire confidence.

The section on the diagnosis of Japanese river fever omits mention of the important confirmatory agglutination reaction obtained when the patient's serum is put up against emulsions of the Kingsbury strain of *Bacillus proteus*.

The section on the treatment of helminthic infections has been read with great interest, and particular interest attaches to the writers' observations of the effects of heat on metazoan parasites and their application to the method of intestinal lavage. The drug treatment of some worm infestations being notoriously unsatisfactory, this method should form a valuable supplement.

This book should find its greatest field of usefulness with practitioners who reside in temperate regions, but who feel that they need to make a rapid survey of exotic diseases they may meet with.

Notes on Books, Current Journals and New Appliances.

PROGNOSIS.

The art of prognosis is difficult. Proficiency is largely a matter of experience with perhaps added intuition; books, however, may be useful. In many text-books prognosis receives little more than cursory mention, and for this reason medical practitioners will welcome a volume on prognosis that has been issued by *The Lancet*.[1] In this volume are included the first group of a series of articles on prognosis that have appeared in *The Lancet*. Articles from the same journal on "Modern Technique in Treatment" and on "Clinical Interpretation of Aids to Diagnosis" have already been published in book form and have been appreciated; a similar fate will doubtless await this volume. The subjects considered include diseases of every system, and the list of authors includes names well known in medical literature.

THE SURGICAL EXAMINATION PAPER.

Dr. McNeill Love has written a booklet as a guide to those who have to sit for written examinations in surgery.[2] He has asked a series of questions and has given the outlines of answers to them. A student who has reached the stage of examinations in surgery should not need this book; if he does, his earlier examiners will have been extraordinarily lax.

[1] "Prognosis", Volume I, published by The Lancet Limited: 1935. Demy 8vo, pp. 384. Price: 10s. 6d. net.

[2] "A Guide to the Surgical Paper, with Questions and Answers", by R. J. McN. Love, M.S., F.R.C.S.; 1935. London: H. K. Lewis and Company, Limited. Foolscap 8vo, pp. 78. Price: 5s. net.

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DIFFICULT CHILDREN.

A STUDY of current conditions makes it apparent that the trained psychologist of today is a figure of importance in society. He is usually a medical graduate whose outlook on his special subject is conditioned by the breadth of view which a medical training engenders. His advice has been given and taken with advantage to scores of industrial enterprises, and his help in the matter of vocational training has been invaluable. The psychological examination of "difficult children" and their upbringing have also been his care; and Reginald Miller[1] asks, in effect: "Is it not possible that in these days we tend rather to overdo the intensive study of abnormalities in children's conduct?" The pertinent query is worthy of consideration from the layman's point of view.

As every psychologist knows, and as men such as Kenneth Grahame, Lewis Carroll and Charles Lamb knew years ago, children dwell on a planet of their own. Theirs is a world of swift changes, prismatic colours and crowding impressions, all very interesting and sometimes rather alarming. Adults, while they are aware of the strain of modern life upon themselves, are apt to forget the effect of these stresses upon the delicate, receptive and rapidly expanding mind of the child. It follows, therefore, that the justice of arraigning a child before an adult tribunal which tests and card-indexes his intellect is open to serious question, unless the tribunal itself be composed of sympathetic and serious people with a basic equipment of medical knowledge. And such examiners do well to remember the warning of a noted man of letters, that the thing studied and the apparatus used in the study are in both cases the same instrument—to wit, the human mind. As time is reckoned, psychology is a new-born baby, and even its best accredited practitioners do not yet label it as an exact science. Books about it abound and are swallowed whole and ill-digested by people of much the same intellectual calibre as those who welcomed "Russian culture" and "minnie golf" in days now past. Lives there a man of hearing and speech so dead that he neither hears nor utters the expressions "psychoanalysis" and "inferiority complex" at least once a day? A section of the Press is to blame for this and allied evils. By sundown on most days we have become privy to the psychological factors underlying the use of lipstick by typists and of nicknames by schoolboys. Once in a way we learn the real reason why men with cleft palates commit suicide more frequently than women with varicose veins. In a word, there are quacks about. They practise a psychology of their own, complete with intelligence tests. In one instance at least a charlatan of the kind has been known to inform a staggered parent that his normal offspring, on examination, has shown himself to be a dullard who might, if lucky, begin and end his career as charioteer of a dustcart. There are dull children in the world, but only long-continued dulness in all environments can be accepted as the sign of mental defect; many children are dull because they are uninterested and bored at school or at home. In

[1] *The Lancet*, December 21, 1935.

a world of infinite variety and a million activities they are taught nothing, or at least learn nothing, which can hold their attention for a minute on end.

Of late, serious attempts have been made to instruct parents in the management of children who are in some way difficult of control. Such plans deserve consideration, provided the rules laid down are simple, modified to suit individual cases, and drawn up by competent authorities. But the indiscriminate reading of psychological text-books too often confuses parents, with unhappy results to the child. The beneficial changes wrought by time and the gradual blossoming of the youthful intellectual faculties are often overlooked by parents and doctors alike. Conversely, well-behaved children may become intractable, nervy and backward either before or long after serious illnesses. This statement is true of such diseases as chorea and rheumatic infections; and the successful treatment of indigestion may be followed by long-continued pica, chewing of bedclothes or volitional vomiting. The imaginative child, usually clever, but easily fatigued and incapable of long concentration, presents another problem. No treatment will cure these inborn failings, but, happily, the child in course of time outgrows them.

The public, as aforesaid, has shown itself to be filled with an irrational enthusiasm for child psychology and has false ideas about the knowledge of medical men on the matter. It is therefore incumbent upon competent medical psychologists to make it known that the general body of the profession disclaims any pretension to full acquaintance with the subject. It is, however, within the province of the ordinary medical attendant to use all efforts to replace parental anxiety and fear by confidence and hope. The days when children were regularly dosed for their health's sake with nauseous medicines have gone. At present there is always the danger that an overwrought mother may do infinite damage by tinkering with the child's psychological well-being. We can minimize such undesirable meddling by attempts to settle minor disputes or domestic uproars, and by giving the assurance that time and natural development will effect a cure.

Current Comment.

THE HÆMOLYTIC STREPTOCOCCUS.

The importance of the streptococcus bacterial family in human infections is so well known that it needs no emphasis; it is equally well known that the hæmolytic streptococci are the more pathogenic variety. But when bacteriological examination of, say, the throat or the sputum reveals the presence of these organisms, what is the significance of this finding? Are all hæmolytic streptococci potentially dangerous, and how is the clinician to interpret the report? It has been well established that most puerperal streptococcal infections of the uterus are due to the implantation of organisms derived from the throats of "carriers" attending the patient. Quite large numbers of people have been found to harbour this organism in the upper respiratory tract, and it would be interesting to know how these streptococci compare serologically and biochemically with those found in human infections. Three valuable papers have been published by R. Hare, W. R. Maxted, L. Colebrook and A. M. Johns, who have, singly and partly in collaboration, produced evidence assisting in the classification of the hæmolytic streptococci found in the nose and throat of human beings, in the stools of pregnant women and on the skin, and also those found in cases of scarlet fever.[1]

The throats of nurses, school pupils and miscellaneous adults were examined, and those streptococcal strains thought likely to resemble strains known to cause infection were investigated, in particular those able to form soluble hæmolysin. Without going into unnecessary detail here it may be stated that precipitin fermentation and other biochemical tests proved that only about one-third of the strains isolated from human throats can be placed in the group which includes the majority of known infective strains. Therefore fully two-thirds of these organisms encountered in human throats and nasal passages may be looked upon as harmless to man. This is not surprising, seeing that virulence tests are necessary in order to incriminate other suspicious organisms such as those of the diphtheria group. It is thought that about 7% of normal persons living in England have potentially virulent strains of streptococcus in the upper respiratory tract. Perhaps we should be thankful that the percentage is so small; but this would certainly appear to be the reservoir of these streptococcal groups, for the work of these authors, when collated, indicates that these organisms do not occur in the fæces of normal parturient women, nor are they found on the perineal or peri-anal skin of women under antenatal observation, or upon the skin of the hands or body of normal people. As regards the presence of streptococci on the hands, they were demonstrated in the case of a very few

[1] *The Journal of Pathology and Bacteriology*, November, 1935.

persons, but in these the real source of the organisms was thought to be the nose or throat. From this observation arises the practical suggestion that the hands of the parturient woman should be treated at intervals with an antiseptic, such as "Dettol", which persists on the skin. It is interesting that no virulent strains were isolated from the fæces of 100 normal parturient women during the first stage of labour; but in 20% of cases of scarlet fever investigated, hæmolytic streptococci of the group *"A"*, that is the group known to be related to human infections, were actually isolated from the stools.

This work confirms the observations of numbers of other workers as to the practical importance of naso-pharyngeal infections, not only *per se*, but also in relation to the possibility of transference of streptococci from the throat to others; for example, to women in labour. As Hare remarks, infections due to hæmolytic streptococci in the human subjects, unless directly traceable to the milk supply or to transference from other cases of infection, are in all probability due to organisms directly derived from the naso-pharynx of a carrier. From the practical point of view it is not wise to rely on the fact that only a small percentage of the community appears to harbour really dangerous organisms of this important group; it is wiser to assume that anyone may be the source of infection and to protect the helpless persons under the hand of the surgeon or the accoucheur.

THE USE OF TIGER SNAKE VENOM IN HÆMORRHAGE.

THE study of the action of snake venoms has received a good deal of attention in this country, contributions to the subject having been made by Martin, Welsh, Chapman and Kellaway. It is, of course, known that the danger of snake-bite to man does not depend only upon the virulence of the poison, but on the efficiency of the biting apparatus, as well as upon the habits and striking methods of the snake. The venom of numbers of Australian snakes is very potent, owing chiefly to the presence of neurotoxins, but in addition to these, certain venoms contain coagulant factors. The tiger snake's venom contains only minimal amounts of hæmorrhagins, which are features of certain other venoms, but it is extraordinarily powerful in its coagulating capacity, being able to clot 12,800,000 times its own weight of citrated or oxalated blood. S. Rosenfeld and S. E. Lenke have investigated the possibilities of tiger snake venom as a therapeutic agent, and report a number of favourable results.[1]

The advantages they claim are the capacity of this venom to form a firm fibrinous clot quickly, to hasten clot retraction and to act independently of other collaborating factors, such as thromboplastin, prothrombin or calcium. The disadvantage is the presence of a very powerful neurotoxin, but the authors point out that the amount of venom required is very small and that the channels of absorption are closed by local thrombosis, thus allowing an ample margin of safety. For their experiments they used a supply of venom furnished by Dr. Kellaway, and after careful titration of the content of coagulant and neurotoxin, put this material to clinical trial. It was necessary to use the venom only in cases of severe hæmorrhagic disease, and to try the effect of other control treatments, such as a simple packing, so as to eliminate fallacies as far as possible. Accessible hæmorrhage only was submitted to treatment, and the conditions treated included thrombocytopenic purpura, hæmophilia, multiple hereditary telangiectases, profound jaundice and a general angioasthenia associated with endocrine deficiency. The venom was applied locally in dilute solution, one in 5,000, and even when large amounts up to fifteen or thirty cubic centimetres of the solution were used in the nose or mouth no other toxic effects were noted. The results appear to have been very satisfactory, and prompt hæmostasis followed the applications, even when other energetic measures had failed. Of course it could not be expected that the use of such an agent could influence in any way any particular hæmorrhagic disease or prevent recurrences of bleeding, and the method can be used only where the accessible site of the hæmorrhage allows topical application to be made. Such a preparation may not have a wide sphere of usefulness, but it is of interest, especially in view of the recent growth of knowledge concerning many biological toxins.

[1] *The American Journal of the Medical Sciences*, December, 1935.

MULTIPLE WARTS IN A CREOSOTE WORKER.

CARCINOMA in tar workers generally results from exposure extending over several years. H. Haldin-Davis has reported the occurrence of multiple warts on the skin of a man who was employed in impregnating wood with creosote.[1] His duty was to stack logs after they had been immersed in creosote for some hours, and while they were still dripping. He was employed in this way for only a few months. His hands, body and thighs came into contact with the fluid. Warts developed on his hands, forearms, nose and thighs. A wart was excised and was described by a pathologist as a squamous papilloma, though there was no sign of malignant transformation. In demonstrating the patient Haldin-Davis said that creosote was derived from gas tar; wood tar did not cause carcinoma. A. Whitfield, who took part in the discussion, concurred in the view that wood tar, unlike gas tar, did not possess carcinogenic properties. Wood tar was mostly guaiacol and this did not cause cancer. Two cases of wood tar carcinoma had been published in Germany, but in Whitfield's opinion the descriptions were not convincing. He said that if hot tar came into contact with the skin a wart resulted in from ten to fourteen days.

[1] *Proceedings of the Royal Society of Medicine*, December, 1935.

Abstracts from Current Medical Literature.

DERMATOLOGY.

Dermatitis Nodularis Necrotica.

W. W. DUEMLING (*Archives of Dermatology and Syphilology*, January, 1936) reports a case of *dermatitis nodularis necrotica*. The patient, a man, twenty-two years of age, presented an acutely exacerbating eruption, which at the outset was compatible with a diagnosis of severe *erythema multiforme*. The condition lasted for one and a half years and ended fatally. The lesions were polymorphous, appearing as hæmorrhagic papules, vesicles and nodules, and later developing into necrotic ulcers. The ulcers occurred chiefly on the elbows, the dorsal surface of the hands and fingers, the knees and ankles. During the last weeks of the illness the patient's temperature was of the septic type, and there was evidence of embolism in the lungs and the right leg. *Post mortem* examination revealed bacterial endocarditis involving the mitral valve, and infected hæmorrhagic infarcts in the lungs. Two types of this condition have been reported in the literature. In one type causation by the tubercle bacillus is undisputed; in the other type the ætiology is still debatable. The case reported by the author belongs to the latter class. *Staphylococcus aureus* was found in the vegetations on the heart valves.

Avian Itch Mites.

M. B. SULZBERGER AND I. KAMINSTEIN (*Archives of Dermatology and Syphilology*, January, 1936) report five cases in which dermatosis was caused by the mites of pet canary birds. He points out that itch mites affect not only human beings, but animals. Many of the mites of animals are similar to the parasites of man in habits and appearance. They are practically all "species-specific", but they can cause pathological manifestations in animals of species other than that of the natural host. The common bird mite (*Dermanyssus gallinæ et avium*) cannot continue to live and propagate on man, but it occasionally causes itching eruptions in susceptible human beings who come into more or less intimate contact with the mite from the bird. The skin eruptions are sometimes urticarial and sometimes papular, and sometimes, but by no means always, closely imitate scabies in both subjective and objective manifestations, such as localization, severe nocturnal itching and so forth. There are certain constant differences from human scabies. True burrows are never to be seen, the interdigital webs and the genitalia are generally spared, and the mite cannot be demonstrated in the human skin. Dermographism is an almost constant finding. To confirm the diagnosis the parasite must be recovered from the bird or from bird cages, nests, perches *et cetera*. The authors state that there seems to be a great variation in the susceptibility of different human beings to dermatoses from contact with these mites. As a result of experiments in which scratch, intradermal and patch tests were performed with extracts of mites, the authors were unable to demonstrate the presence of any skin sensitivity to these extracts. For these experiments one of the patients suffering from avian itch and two suffering from scabies were used.

Maggot Therapy in Dermatological Conditions.

S. AYRES, JUNIOR, N. P. ANDERSON AND G. M. TAYLOR (*Archives of Dermatology and Syphilology*, January, 1936) report a case of chronic ulcerating granuloma of undetermined ætiology in which maggot therapy was successfully used. The authors give details of the many laboratory investigations that were carried out, and the different forms of treatment to which the lesion in the patient's thigh was subjected. They point out that so far maggots have been used almost exclusively in surgical conditions. In view of the success obtained by them they suggest that maggot therapy might be applied with advantage to dermatological conditions involving chronic ulcerative or granulomatous processes, such as amœbic ulceration of the skin, coccidioidal granuloma, and the spreading ulcerative and gangrenous infections of the abdominal wall which occasionally follow appendicectomy.

Mapharsen in the Treatment of Syphilis.

O. H. FOERSTER *et alii* (*Archives of Dermatology and Syphilology*, December, 1935) have investigated the therapeutic value of mapharsen in the treatment of syphilis. Mapharsen is an abbreviation of the full chemical term meta-amino-para-hydroxyphenylarsine oxide. It is a trivalent arsenical preparation generally thought to be the most important effective cleavage product of the arsphenamines. It has approximately the same percentage of arsenical content as that of the arsphenamines; it has a smaller effective therapeutic dose and therefore requires the introduction of much less arsenic. The drug is given intravenously and the technique of its administration is as simple as that of neoarsphenamine. The author's observations were made on 80 patients with syphilis (neurosyphilis was excluded). The patients were given 2,117 injections of the drug; 67 patients were under observation and treatment for six months or longer, and 23 of these for from twelve to eighteen months. Evidence of pharmacological action was shown promptly in all visible lesions. Spirochætes disappeared from open lesions as a rule within twenty-four hours. Healing of visible lesions was rapid and was equal to that noted with arsphenamine. The positive reaction to the Wassermann test was reversed in nearly all cases of early syphilis. Return to a positive reaction occurred in one-half of the cases and was found to be associated in five instances with abnormal findings in the cerebrospinal fluid. Clinical relapse and return to positive serological findings were observed most often after irregular or short periods of therapy during the first half year with long lapses in treatment. Nitritoid reactions did not occur. The immediate toxic reactions were chiefly mild gastrointestinal disturbances. The drug was well tolerated in properly adjusted doses by nearly all patients. Jaundice occurred in four instances and accentuation of renal impairment was observed in four others. The authors conclude that mapharsen is a potent antisyphilitic agent and possesses special properties that justify an extensive study of the drug for a period of years.

UROLOGY.

Microculture of the Tubercle Bacillus.

F. DE GIRONCOLI (*Zeitschrift für Urologie*, January, 1935) has collected 496 cases in which culture of suspected tubercle bacillus gave a positive result. Out of these 496 cases, the tubercle bacillus was found in 314 cases in smears only. The results of guinea-pig injection may be misleading, since some strains of tubercle bacillus are pathogenic to human beings, but not to guinea-pigs; he also states that guinea-pigs may develop tuberculosis apart from inoculation. The method of culture is that described originally by Loewenstein, but the author claims that Italian scientists have refined and improved the method. A certain number of quoted workers have found culture to be positive in 100% of a large series of proved cases of urinary tract tuberculosis. A positive result may therefore be relied upon. A certain number of cases clinically diagnosed as urinary tract tuberculosis gave "negative" cultures, but subsequent events proved that these cases were not really tuberculous. The author therefore considers that a negative result is also of definite value to the clinician.

Recovery from Dilatation of the Upper Urinary Tract.

H. BOEMINGHAUS AND L. ZEISS (*Zeitschrift für Urologie*, February, 1935) report cases and show pyelograms to illustrate the power of recovery from long-standing dilatation of the renal pelvis or the ureter, provided the cause is mechanical and obstruction is not complete. Complete obstruction lasting for three or four weeks renders the kidney atrophic and incapable of recovery. With congenital atony (primary idiopathic

or the so-called megalo-ureter type) recovery is hardly ever seen, even after the best provision for drainage has been made. Similar atony occurs after infantile paralysis and other diseases of the nervous system.

Late Hereditary Syphilis of the Kidneys.

B. VALVERDE (*Journal d'Urologie*, January, 1935) considers that the rare malady of late congenital syphilis of the kidneys has been very little studied. Whenever hæmaturia of very doubtful origin occurs, the possibility of syphilis should not be overlooked. Apart from general signs of congenital syphilis, the clinician must rely for diagnosis on the results of anti-syphilitic treatment and on a provoked positive reaction to the Wassermann test. It is very important to note that the hæmaturia is intensified at the beginning of treatment.

Papilloma of the Bladder Summit.

H. BLANC (*Journal d'Urologie*, March, 1935) considers that papillomata of the superior wall of the bladder, even though of innocent appearance through the cystoscope, are of distinctly malignant tendency and should not be treated by endoscopic electrocoagulation. Of seven patients, four who were treated by electro-coagulation relapsed constantly until finally all four died. Another patient, left untreated, died in a short time. Another, in whom the tumour was of considerable extent, was treated by wide partial resection of the bladder; he also suffered a relapse, but slowly; the patient is still alive after three years. Finally, a patient with a malignant tumour of limited extent, treated by partial resection, has not not yet suffered a relapse, two and a half years later. A study of the differing conditions in the lymphatic connexions of the superior and inferior walls of the bladder gives some explanation of the increased malignancy of tumours of the summit. Wide partial resection of the bladder wall in its affected part is therefore strongly advisable in all such tumours.

Atony of the Prostate.

G. MARION (*Journal d'Urologie*, May, 1935) is surprised that the syndrome which he groups under the title of prostatic atony has attracted the attention of urologists so little and, moreover, that no mention of this disease is to be found in the classic urological text-books. By prostatic atony Marion means an affection characterized by: (i) a state of general nervous depression, (ii) states of ano-rectal sensitivity, and (iii) increase in volume of the prostate gland, which presents certain characteristics peculiar to this disease. Marion considers prostatic atony to be relatively common. It occurs chiefly in relatively young men and particularly in town-dwellers. Gonorrhœa, with accompanying prostatitis, is frequently a component of the previous history. The author's view is that the prostatic atony is secondary to a state of general nervous depression from some cause. Paresis of the prostatic musculature leads to incomplete evacuation of secretion from the prostate and so causes a feeling of weight as well as referred pains. This disturbance of regular evacuation of contents may well cause a reflex hypersecretion of prostatic fluid. The seminal vesicles share in the distension, and the more acute pains probably arise from this cause. A distressing feature is that some patients think they are suffering from cancer of the prostate on account of the pains, while others are alarmed by the spermatorrhœa which is so often present. Genital troubles are the rule, and frequently take the form of relative or even complete impotence. The prognosis of this affection is relatively good, provided it is recognized and properly treated. These patients are both physically and morally depressed, and, once a complete examination has been made to exclude other possible local conditions, much energy should be spent in reassuring the patient that the local condition is of little importance. Above all, no local treatment should be given, so as to keep the patient's mind away from worry about his prostate. General tonic treatment with phosphorus, arsenic and iron is of the greatest value. The author has secured excellent results by giving two cachets of "Phytin" a day for a fortnight, followed by the subcutaneous injection of cacodylate of soda every day for a fortnight. This treatment is continued for at least three months. If the need for coitus is felt, the natural evacuation achieved by this means will do good if practised in great moderation, but prostatic massage should be avoided at all costs.

Renal Drainage by Tube.

K. HEUSCH (*Zeitschrift für Urologie*, May, 1935) describes his technique for nephrostomy when renal drainage is required for more than a few days in order to deviate the urine or for other reasons. Sharp cutting through the renal parenchyma is very much to be deprecated. The method preferred is the introduction of a curved male sound through a small pelvic incision and protrusion of the tip of the sound through one of the middle set of calyces onto the convex border of the organ. The end of the sound is made to bore gently through the renal parenchyma while flat counter-pressure is made from the outside. When the tip of the sound appears just under the capsule, a tiny incision is made in the latter to allow the sound to come through. The best type of sound is the Nitze or Lister shape with olivary tip. A size 20 French is sufficient. Onto the protruding tip is fixed a rubber tube the diameter of the little finger tip or thereabouts. The sharp edge of the tube should be carefully bevelled as it fits over the sound, so that it does not tear the renal parenchyma as it is withdrawn into the renal pelvis. If necessary, the tube may be prevented from becoming detached from the sound by a ligature placed just behind the olivary tip of the sound. A catgut renal suture right through the parenchyma is made to anchor the tube at the convex border. By this technique damage to the kidney is reduced to a minimum, while the risk of immediate or later hæmorrhage is almost nil. The tube may be made to enter through the lower calyces if that direction is more suitable for efficient drainage. A renal drainage tube is more efficient than a pelvic tube or the use of a ureteric catheter. Moreover, the tube placed in position by the blunt technique is well borne by the patient and is easily changed by the surgeon whenever necessary.

Renal and Ureteric Papilloma.

H. SCHRANZ (*Zeitschrift für Urologie*, May, 1935) holds that the history in cases of renal and ureteric papillomatosis is often an uncertain guide and that no typical syndrome can be pointed out. Hæmaturia without pain, though sometimes associated with renal colic, is the most noteworthy sign. In one instance an accident involving direct violence brought on hæmaturia. With the help of the full gamut of urological diagnostic measures available at present, accurate diagnosis before operation may now be expected; this was attained in the three cases described by the author. On account of their uncertain character, such growths in the renal pelvis or ureter or, as is often the case, involving both parts, should always be treated as malignant. The only treatment to be considered is complete removal of the kidney and the whole of the ureter, including the vesical intramural portion of the duct.

Pott's Disease and Genito-Urinary Tuberculosis.

G. MOCCIA (*Urologia*, June, 1935) reviews a series of 35 cases of renal tuberculosis and 15 cases of orchi-epididymal tuberculosis associated with Pott's disease, and maintains that this association, to which as yet attention has not been sufficiently directed, rests on the anatomical relations of lymphatic tracts. The lymphatic collecting trunks of the kidney, testicle, epididymis and vertebral bodies debouch in a great part in a common primary lymph gland area. Moreover, before this region is reached direct anastomoses between them occur. Also the retrograde course of the lymph current is suggested to account for the communication between the vertebral bodies and the uro-genital tract. The author desires that this communication be taken as a preliminary note, since he intends to go further into the subject with clinical, anatomical and anatomo-pathological researches.

British Medical Association News.

SCIENTIFIC.

A meeting of the Victorian Branch of the British Medical Association was held at Horsham on November 23, 1935, Dr. R. M. Downes, the President, in the chair. Part of the report of this meeting was published in the issue of January 25, 1936.

The Nail in Surgery.

Dr. G. R. Felstead read a paper on "The Nail in Surgery". He illustrated his remarks by a series of skiagrams.

He began by saying that some apology was due for the fragmentary nature of his remarks. He had used the title "The Nail in Surgery" as a peg on which to hang some observations more or less related one to another. The justification for his remarks might perhaps be found in the probability that many would disagree with his contentions and that they would therefore be provocative of discussion.

He wished to discuss briefly some of the situations in the body where the carpenter's nail had been of service to him, and he took first a certain type of fracture about the ankle. The term Pott's fracture was one that they could ill afford to drop, if only from the point of view of historical interest; but it was clear that they were accustomed to using it rather loosely to cover several types of fracture.

Anatomically the most obvious feature about the ankle joint was the mortise-like arrangement of the internal and external malleoli, which helped to insure the lateral stability of the joint; but it should not be forgotten that there was a projection of bone on the posterior border of the tibial articular surface which was almost of equal importance. This projection was largely instrumental in preventing posterior dislocation of the astragalus and had been aptly called the posterior malleolus. They might consider then that there were three malleoli about the ankle joint, and fracture in this region might involve one malleolus only or any group of two, and in some cases all three. In the after results of treatment lateral displacement of the foot was bad, but posterior dislocation was perhaps worse in its crippling effect, and posterior dislocation was by no means uncommon in these fractures. It was very commonly not recognized or was not given sufficient care in the matter of reduction. Non-reduction meant a foot incapable of flexion or extension. It could be taken as certain that posterior dislocation of the foot in these cases meant fracture of the posterior malleolus, and therefore the proper anatomical reduction of this posterior lip of the tibial surface was all-important.

At this stage Dr. Felstead showed skiagrams to illustrate a typical case in which the posterior dislocation was the most important of the deformities present. The first skiagram showed an antero-posterior view of a severely damaged ankle. At first glance the true nature of the injury was not evident, but close inspection showed a fracture of the tip of the tibial malleolus, a fracture of the fibula extending some one and a half inches above the malleolar tip, and, thirdly, a slight irregularity in the horizontal articular surface of the tibia. Further, there was seen a faint shadow overlapped by the lower end of the tibia. This represented the broken fragment of the posterior malleolus. The lateral view showed the true extent of the lesion. It was seen clearly that the posterior lip of the tibia had been broken off and had been displaced far backwards and had allowed the astragalus, and with it the whole foot, to become dislocated. No doubt the strong attachment of the external and internal lateral ligaments had brought about the further breaks in the fibula and tibia, with consequent carrying backwards of their lower fragments.

The patient was a woman, aged fifty-eight years, who had fallen on a veranda with her foot caught underneath her. She was seen forty-eight hours after the injury, when immediate reduction was carried out with spinal anæsthesia. Reduction was very easy, but retention in good position could not be obtained by ordinary methods of splinting and extension. In consequence, operation had been carried out four days after the date of injury. Under spinal anæsthesia a hockey stick incision was made, the vertical limb lying over the lower end of the fibula, the horizontal limb crossing the *tendo Achillis* at its insertion. The skin and subcutaneous tissues were reflected and showed anteriorly the broad *peroneus brevis* muscle clothing the lower end of the fibula and posteriorly the insertion of the *tendo Achillis*. A vertical incision separated these structures, exposing very clearly the posterior surface of the tibia and the loose fragment representing the posterior lip of the tibia. The periosteum round the fragment was incised to show up cleanly its boundaries. The displacement was then easily rectified. Then the interesting fact was noted that by light finger pressure only, the fragment being held in its anatomical position, all tendency to recurrence of the posterior dislocation of the foot disappeared. A two-inch nail was then inserted obliquely upwards and forwards through the fragment and through the lower end of the tibia. The wound was sutured without drainage and a light plaster splint was applied.

The next skiagram showed this clearly. It showed also that there was not perfect anatomical replacement of the fibular malleolus and moreover that the nail projected a considerable distance in front of the tibia. The slight fibular displacement was not of great consequence. The projection of the nail illustrated what Dr. Felstead had found to be a frequent fault in nail work. In the anxiety to provide a firm anchorage for the displaced fragment too long a nail was chosen. In this case the nail could be felt projecting under the skin of the anterior surface of the lower part of the leg, but even after the lapse of two years the patient was entirely unconscious of any discomfort on that account.

The next case discussed by Dr. Felstead was one of fracture about the elbow joint. The skiagram showed the lateral view of a quite ordinary supracondylar fracture of the elbow joint in a girl aged four years. Dr. Felstead regretted that he could not show the antero-posterior view, but in addition to the moderate posterior displacement of the lower fragment there was considerable lateral displacement, much bruising and swelling of the tissues, but no serious interference with circulation. This fracture had occurred some four years previously, and with the method of splinting then commonly in use it was found impossible to retain the fragment in good position. Accordingly after the lapse of six or seven days the fracture was exposed. A mid-line incision extended from below the olecranon to about three inches above. This was deepened to the triceps muscle, the lateral borders of which were well defined, and the ulnar nerve was located just under the inner border of the triceps. The nerve was dissected out of harm's way. A finger was inserted round the triceps tendon and the latter was cut in a Z-shaped fashion, giving very clear exposure of the region of the break. The lower fragment was displaced markedly backwards with considerable elevation of the periosteum. What appeared to be perfect coaptation of the fractured ends was obtained and drill holes were made obliquely through the humerus downwards into the condyles. On one side the drill broke in the bone and was left in place instead of a nail being inserted.

The next skiagram showed the nails in position; it also showed that anatomical reduction was not perfect. This was to be considered the fault of the operator and not of the method. There was still present some projection of one margin of the lower end of the upper fragment, which was probably due to internal rotation of the humerus. However, functionally the result was perfect, as shown by photographs of the arm taken some three years after the injury.

Dr. Felstead pointed out that he had not found it difficult to insert these nails, in spite of the thinness of

the lower end of the humerus. If the nails were inserted obliquely from above downwards, the process did not seem to be complicated and there appeared to be ample hold. Dr. Felstead had never seen suppuration or, indeed, the slightest reaction about a nail in any situation in the body. He had seldom found it necessary to remove nails and then only because he had chosen too long a nail and the point was projecting under the soft tissues on the further aspect of the limb.

Dr. Felstead then demonstrated a Colles's fracture. The patient was a girl, aged thirteen years, who had fallen from her bicycle onto her outstretched hand. The parents regarded the condition as a sprain and did not bring the girl for treatment until three weeks after the injury. The antero-posterior view showed the separation of the ulnar styloid and the severe fracture in the region of the radial epiphysis. It was noticed that the epiphysis had almost disappeared from view and that the carpus appeared to sit directly on the diaphysis. The lateral view showed the great deformity present. The clinical features were of course constant pain, marked deformity and limitation of movement. Reduction under general anæsthesia was exceedingly difficult and subsequent X ray examination revealed little improvement. A second attempt at reduction was made and this time was successful, but with the expenditure of great force. Whether the severe grinding of fractured surfaces incidental to the reduction was responsible or not, Dr. Felstead did not know, but certainly there was not the usual tendency for a well reduced Colles's fracture to remain in good position. For this reason a carpenter's light finishing nail was driven through the lower fragment obliquely upward into the shaft. This could scarcely be called compounding the fracture, as it was necessary merely to make a nick through the skin over the styloid process of the radius and to drive the nail home. The result was perfect fixation, a feeling of security that the parts would remain in position, the necessity for light splinting only and the opportunity of early active movement.

Discussing the desirability or otherwise of opening up these fractures and fixing the fragment with nails, Dr. Felstead said that he believed that with modern methods of reduction and plaster splinting such an elbow fracture as he had shown would easily be taken care of without open operation. Even in the short clinical experience of those present the treatment of fractures had undergone the most startling changes. It was only during the last few years, since they had learned the use of the unpadded plaster cast and skeletal traction by pin or tense wire, that any feeling of confidence in treatment had been possible. Moreover, the old method of rapid and forceful reduction of displacement had given way to steady prolonged extension with gentle manipulation of fragments into position.

Up to three or four years ago Dr. Felstead had believed that nearly every case of fracture about the elbow, especially in children, should be opened and nailed. Now he knew that with careful extension and manipulation and the unpadded cast nearly every such fracture could be treated conservatively. Nevertheless there was the occasional severe case in which one or both condyles were broken off and the fracture extended into the joint. Here it was of supreme importance to bring about perfect reduction, and he did not think the result could always be obtained without open operation. It was obvious that extension would not avail where only one condyle was fractured. Operation was not difficult. The approach described gave good exposure and the reposition of the fragment and the insertion of nails was not unduly complicated. The safest time to operate, in Dr. Felstead's opinion, was after a period of five or six days from the injury, when a protective barrier might be supposed to be present. This delay could, of course, be permitted only if the circulatory condition of the limb was quite satisfactory.

The same observation would apply to fracture about the ankle. There would be the occasional case of posterior dislocation in which ordinary retentive measures were not effective in preventing the recurrence of the backward displacement of the foot. Here the nail offered a solution of the problem. It would be only the rare case of Colles's fracture that would need nailing.

The next two patients illustrated the not uncommon condition of severe chronic arthritis confined to one knee joint. The first patient was a man, aged thirty-seven years, who had been almost completely incapacitated from work for several months on account of a painful swollen knee. The origin of this was a knock from the starting handle of a motor car several years before, and the condition had got progressively worse since then. Walking had been almost intolerable and the slightest jar to the leg caused excruciating pain; a comfortable night was almost unknown. Examination revealed a tender, swollen, hot knee joint with partial ankylosis and extreme pain with movement. The swelling was obviously due to capsular thickening, and the skiagram showed that the main features of the condition were due to gross erosion of the articular surfaces. Doubtless with every movement of the joint these eroded surfaces were grinding on one another and possibly freshly formed soft adhesions were being torn across. A prolonged period of rest and medical treatment had given nothing but temporary relief, and finally excision of the knee joint was performed under spinal anæsthesia. This followed classical lines and needed no description, but before the wound was closed two nicks were made in the skin over the upper end of the tibia; two three and a half inch nails were driven crosswise up through the tibia into the opposite femoral condyles. This fixed the joint so securely that only a light plaster splint was necessary afterwards.

The other patient was a woman, aged forty-six years, on whom Dr. Felstead had operated some five years previously. She had presented almost precisely the same condition as that of the previous patient and before operation was worn out by a long period of pain and sleepless nights.

Dr. Felstead said that he introduced these two cases in the first place to urge that excision of the knee should be the treatment of choice when the cartilage was hopelessly involved and when the prolonged pain and disability made the patient's life a burden. These patients were very grateful for the complete relief from pain and readily adapted themselves to the condition of stiff knee. Secondly, he wished to indicate the usefulness of nails in bringing about an immediate stability of the joint after excision. Any anxiety as to the bones slipping before union occurred was abolished. It should be noted that these nails were not removed. In the first patient shown they had been in for five years; in neither case were they giving the patients the slightest discomfort.

These few examples did not, of course, exhaust the possibilities of the nail in surgery. There were other situations in which it could be of the greatest service. In that very valuable exposure of the hip joint in which the great trochanter was detached by a Gigli saw and with its attached muscles was reflected upwards from the femur, one or two nails driven in afterwards would insure its proper fixation.

The first occasion on which Dr. Felstead had used a nail in surgery, many years before, was from desperation rather than from choice. The patient was a middle-aged woman with an advanced tuberculosis of the ankle joint. The region of the ankle was enormously swollen and the skin was blue and riddled with sinuses from which pus under tension oozed profusely. After excision of a large amount of bone, comprising all the articular surfaces and after the removal of a large amount of greatly thickened and diseased capsule the foot hung in such a hopelessly flail position that the question of support became urgent. The diseased condition of the skin and the presence of sinuses on all aspects made the idea of a padded plaster splint unwelcome. The unpadded splint had not been thought of then. In these circumstances Dr. Felstead had obtained an ordinary four-inch carpenter's nail. This was driven straight up through the *os calcis* into the lower end of the tibia. Thereafter, although the wound drained for several months, there was never the slightest anxiety about the fixation of the foot. Ultimately the sinuses healed, ankylosis of the ankle joint became secure,

the nail was removed and the patient walked with very little disability.

Dr. Felstead's experiences with dislocation of the outer end of the clavicle had been so unsatisfactory that he was determined that in the next case he would drive a carpenter's thin finishing nail through the acromion, past the acromio-clavicular joint and into the outer end of the clavicle. He believed that any subsequent fixation of the acromio-clavicular joint would be of less importance than the very troublesome instability which followed the persistence in most cases of the dislocation.

So far he had not had the fortune to have to treat a case of intracapsular fracture of the hip since the use of the Smith-Petersen nail had become general. In such a case he thought that he would be tempted to forsake the homely carpenter's nail for the more aristocratic rustless flanged weapon, which appeared to be well adapted for the purpose.

Dr. Felstead finally put in a plea for the cheap and efficient carpenter's nail for the general run of cases, and said that surgeons should not be dazzled by the glamour of the rustless nail into thinking that a little iron oxide would do any harm.

Dr. Forbes MacKenzie thanked Dr. Felstead for his extremely practical address, and said that he himself had always had a soft spot in his heart for nails. He recalled how his old master, the late Sir Thomas Fitzgerald, when confronted with a fracture below the knee with backward displacement, would call for a tenotome and divide the *tendo Achillis* and then proceed to place the fragments in correct position. Dr. MacKenzie could assure those who had not tried this method, that there was no need for concern about the satisfactory healing of the tendon. In the big up-to-date city hospitals skeletal traction was the method most generally used; there were, however, nursing difficulties to control sepsis and to maintain traction when pins were used. Dr. MacKenzie had used nails for bad Pott's fractures, but he preferred wire for supracondylar fractures. He liked Dr. Felstead's suggestion for the fixation of recurrent acromio-clavicular dislocation and would certainly remember it in future. He stated that traumatic osteoporosis was quite common about the knee joint, and he had established the practice of drilling down into the affected area. By this means it was possible to save the bone and an attempt at regeneration would follow.

Dr. C. J. O. Brown, speaking of fractures about the ankle, was in agreement about the benefit to be derived in ease of reduction if the *tendo Achillis* was divided, but mentioned that right-angle knee flexion to relax the gastrocnemius muscle group was often sufficient. Dr. Brown's experience of the acromio-clavicular dislocations was different from that of Dr. Felstead. He could remember only one case in which a good result had not been obtained after fixation for six to eight weeks; if the coraco-clavicular ligament was torn, the patients were likely to do badly; otherwise they became free of pain and symptoms in a very gratifying manner. He instanced the case of a footballer who sustained this dislocation and played football again in three weeks. Dr. Brown thought that from the skiagrams of Dr. Felstead's patient with the knee joint affection and the clinical information which had been supplied, the condition might have been tuberculous and that this possibility had not yet been excluded. At the Alfred Hospital it was usual, when nails were used for fixation, to put the nail through the skin, leaving the head outside; the nail could then be pulled out later on. At times Dr. Brown had used screws insteads of nails. He had found some such procedure necessary to fix a loose fragment of capitellum for instance. In the treatment of fractures of the lower end of the humerus Böhler taught that the correct position for the forearm was flexion and pronation; supination was wrong; it tilted the lower fragment of the humerus with valgus of the elbow joint and damage to the ulnar nerve. In intracapsular fracture of the head of the femur he had found that the famous Smith-Petersen nail was very difficult to place in the right position to get correct alignment.

Dr. Victor Hurley said that he could vouch for the value of nails for fixation with that knife-edged coaptation which was absolutely essential in the operation of excision of the knee joint. He left them with from one-quarter to one-half an inch projecting through the skin; they came out without force at the end of three or four weeks. Another type of fracture in which he used nails for fixation was that one which was known as the bumper-bar fracture below the knee, in which a vertical split in the upper end of the tibia extended into the joint and the medial fragment was carried away, leaving a big gap, which could be closed very effectively with a nail or two. Dr. Hurley said that in the cases of acromio-clavicular displacement which had come under his care, very little disability had occurred afterwards. He preferred nails to screws for fixation purposes; he thought that screws loosened much more quickly than nails.

Dr. G. A. Penington said that no one had mentioned how useful a nail was as a pusher for invaginating the stump of the appendix when tying the purse-string suture.

Dr. R. M. Downes, before calling on Dr. Felstead to close the discussion, said that he too was taken with the suggestion that a nail should be used to secure fixation of acromio-clavicular dislocation.

Dr. Felstead, in reply, said that he was sure it was not necessary to remove the nails and that, if the nail was allowed to project through the skin a little, suppuration would be likely to occur with the production of a small discharging sinus, which would delay healing and might extend inwards. He found it difficult to understand, with Dr. MacKenzie, how mere drilling would relieve the pain in a joint, where erosion of cartilage was extreme. Dr. Felstead referred to a child, aged four or five years, who sustained a fracture of the lower end of the humerus with posterior dislocation of the lower fragment. He had straightened the arm gently and with steady extension and gentle manipulation had reduced the deformity. The radial pulse had disappeared, though the capillary circulation was excellent, and after twenty minutes he put the arm up in plaster with the flexor surface exposed. The radial pulse returned in three hours. In a personal communication Dr. Thomas King had told him that he had seen a few similar cases and the absence of the radial pulse was attributed to a spasm which might persist for several hours.

A meeting of the New South Wales Branch of the British Medical Association was held at the Prince Henry Hospital on August 22, 1935. The meeting took the form of a series of demonstrations by members of the honorary staff of the hospital. Part of the report of this meeting appeared in the issue of March 7, 1936.

Megaloureter.

Dr. R. J. Silverton showed pathological specimens and X ray films of three cases of megaloureter associated with infection of the upper urinary tract. Dr. Silverton said that the interest in these cases of what had been called by German writers primary dilatation of the ureter, lay in the question of the original site of obstruction, which was supposed by many to be at the uretero-vesical junction, and to spring from achalasia or absence of relaxation of the sphincter mechanism at this point.

A male patient, aged forty-seven years, first seen in January, 1934, gave a history of injury to the right flank four months previously, followed by local pain and hæmaturia; no vesical symptoms were present. The urine was grossly purulent, infection being by *Bacillus coli*. Urological investigation revealed very poor efficiency of the right kidney and moderate efficiency of the left kidney, with heavy infection on both sides. There was a moderately large dilatation of the right kidney pelvis and calyces as well as the whole length of the right ureter. There was similar dilatation, but to a less degree, of the upper part of the left urinary tract. Indwelling ureteric catheters, with local and intravenous antisepsis, were tried out for some months, and, in addition, a ketogenic diet. No

benefit was derived from any of this treatment, so efforts were concentrated entirely on the right side, the mouth of the right ureter being cut, through a cystoscope, so that a very large catheter could be inserted for drainage and lavage, but without any effect on the sepsis. The patient was still alive, but was a sick man and unfit for work, and was apparently incurable.

Dr. Silverton said that the accident had caused the hæmaturia and drawn attention to the sepsis, which had probably existed for many years.

Dr. Silverton's next patient was a male, aged thirty-three years, whom he had first seen in October, 1934. The patient complained of dull pain in the left loin and the left iliac region of nine days' duration only, and no previous urinary tract symptoms at all. During the same period he had experienced slight scalding at the end of urination and slight nocturnal frequency. The upper part of the right urinary tract was found to be normal. Gross pyuria with *Bacillus coli* infection of the left kidney was found, with severe left renal deficiency and dilatation of the whole of the left ureter and moderate dilatation of the left kidney pelvis and calyces. Treatment by an indwelling ureteric catheter and renal lavage, as well as intravenous injections of mercurochrome, improved him a good deal in general condition, and he put on 12·8 kilograms (two stone) in weight. He returned in four months for reinvestigation, when cystoscopy caused rigors and a rise in temperature, showing that he was still at the mercy of a severe infective process. It was judged the wisest course to perform nephrectomy. Examination of the excised left kidney showed chronic pyelonephritis with dilatation of the calyces and the whole ureter. The walls of the calyces were thick and fibrous. Dr. Silverton said that probably the dilatation of the ureter had been progressing for many years, though it could not be conjectured how long infection had been present, since it might cause no symptoms beyond a slight impairment of the general health.

Dr. Silverton's next patient was a woman, aged twenty-nine years, first seen in July, 1935, with a history of pyelitis on and off for ten years. She complained of pain radiating from the right loin to the iliac region and vulva for two years, very much worse lately. In the previous few months vesical symptoms with hæmaturia had supervened. The urine was heavily turbid with pus and there was a mixed infection of bacilli and cocci. Urological investigation revealed an enormously dilated right kidney pelvis and right ureter. The results of tests of the efficiency of the right kidney were extremely poor, while those of the left side were normal. A right nephrectomy was decided upon. The kidney was found to be normal in size; but the pelvis and ureter were very much dilated. Only the upper half of the ureter was removed.

Dr. Silverton pointed out that in the specimen quite an appreciable amount of renal parenchyma was still present; nevertheless, he said that nephrectomy was probably the best course in a unilateral case, since with such an enormously dilated ureter the renal muscular mechanism was at a mechanical disadvantage and gradual destruction of the kidney was sure to occur.

Prostatic Obstruction.

Dr. Silverton next showed a pathological specimen illustrating complete replacement of renal tissue as the result of long-continued prostatic obstruction. The patient was a male, aged seventy-three years, whom Dr. Silverton saw first in February, 1933. Twelve years earlier the patient had had a suprapubic prostatectomy performed elsewhere, and practically ever since that operation had complained of great bladder distress and frequency of urination. Prostatic adenomata were found, so it was likely that the first operation was incomplete. The patient's general condition, renal inefficiency and gross pyuria necessitated prostatectomy in two stages with a long interval between. At the second operation, which was an open one, thick pus was seen exuding from an orifice on the left side of the floor of the bladder. A diverticulum was suspected; but none was found later by cystography. The bladder distress continued after prostatectomy, though the stream was quite free. A further investigation showed that the pus was coming from a dilated left ureteral orifice, and the left kidney was completely destroyed. The right kidney was moderately efficient. The left ureteral orifice was retracted in a funnel shape, and altogether the condition was suggestive of tuberculosis of the left kidney, though no tubercle bacilli were found in the urine. The patient insisted on taking the great risk of undergoing a left nephrectomy, since it was considered that such removal might confer relief from bladder pain.

The patient withstood the operation fairly well and had some bladder relief for a little while; but his general condition became gradually worse and he died some months after the nephrectomy.

Examination of the left kidney, removed at operation, showed no sign of renal parenchyma at all. It was simply a fibrous and fatty mass with one cavity in it, from which, no doubt, the pus had been coming. There was no histological evidence of tuberculosis.

Hydronephrosis.

Dr. Silverton's next specimen was from a case of infected hydronephrosis due to congenital malimplantation of the ureter. The patient was a woman, aged forty-nine years, first seen in July, 1935. She had complained of pain in the right loin for eight weeks. There were no vesical symptoms nor hæmaturia. On cystoscopy the left renal efficiency was found to be normal, but the right kidney was quite functionless. A right retrograde pyelogram showed up the ureter as far as the kidney; but apparently the sodium iodide solution would not enter the kidney pelvis. Nephrectomy was performed. Dr. Silverton pointed out that the right kidney with its pelvis formed one large globular mass, really only a thin shell, in which the ureter was acutely implanted near, but not at, the lower end of the pelvis. The ureter was so closely adherent to the wall of the pelvis below its point of implantation, and the opening seen from the inside was so small, that it could be seen quite easily that it would be difficult for fluid to enter or leave the pelvis from the ureter. The ureter itself was not dilated.

Renal Ptosis and Infection.

Dr. Silverton next showed an X ray film to illustrate a case of renal ptosis with gross ureteric kinking and renal infection. The patient was a male, aged thirty-six years, who complained of pain in the right loin, radiating to the testis, occurring at intervals for several months. There was no hæmaturia, but there were some vesical symptoms. Pus and *Bacillus coli* were found in the urine. Cystoscopy showed infection in the right kidney; the renal efficiency was good on both sides. An intravenous pyelogram showed a normal left kidney; but the right kidney was markedly ptosed, though no dilatation was present. The right ureter was not clearly seen. Dr. Silverton said that in such cases, when some definite anatomical details were desired, a retrograde pyelogram was far more serviceable than an intravenous pyelogram, and so it had proved in this case, for gross kinking of the upper end of the ureter, with marked dilatation of ureter, pelvis and calyces, had been seen on the right side. Nephropexy was advised in order to get rid of the obstructive kinking. At operation also any external obstructive bands *et cetera* could be removed. Following this it might be necessary to treat the kidney locally by ureteric catheter drainage and lavage. So far, the patient had refused operation.

Urinary Calculus.

Dr. Silverton finally showed two specimens illustrating calculus disease in young men, with an extraordinarily short duration of symptoms, considering the size of the calculus in each case.

The first patient was a male, aged twenty-two years, first seen in May, 1934, complaining of pain in both lumbar regions, much worse on the left side, for several weeks only, and no other symptoms. Heavy pyuria was present. A radiogram showed an enormous calculus of

irregular shape, nearly 17·5 centimetres (seven inches) long, and 2·5 centimetres (one inch) in diameter in its widest part, distending the lower half of the left ureter. At cystoscopy the catheter went up only about 3·0 centimetres on the left side. The renal efficiency on that side was nil; it was normal on the right side. At operation a mid-line suprapubic incision was made; through this the left ureter was doubly ligated and divided between the lower end of the calculus and the bladder, and then the densely adherent ureter was dissected up the left iliac fossa. This wound was closed and a lumbar incision made, through which a large and extremely dilated kidney was removed, together with the whole ureter intact.

Examination of the specimen showed a functionless kidney and an enormous ureter distended in the lower half by the calculus. The patient's progress after the operation was satisfactory.

The next patient was a male, aged twenty-five years, first seen in July, 1935, complaining of pain during micturition and great frequency of micturition day and night. There were no renal symptoms. Radiography showed a large oval calculus, about 6·25 centimetres (two and a half inches) long, lying in the bladder region. Litholapaxy was attempted, and the stone was quickly caught between the blades of the lithotrite, but unfortunately in its long axis. Soon after pressure was applied the blade of the instrument was distinctly felt to crack. The instrument was gently closed and withdrawn *minus* the male blade, which had fractured at its base. Cystotomy was performed and the stone and the broken-off blade were removed. Progress was satisfactory.

The stone was sawn in two, longitudinally, in order to show the distinction between the outer brittle crust and the inner hard crystalline mass. Carbonates, triple phosphates and urates were in the outer portion, while the inner harder mass consisted of calcium oxalate and some earthy phosphates. Embedded in the centre of the crystalline area were the remains of some organic material. Dr. Silverton said that until further investigation was carried out it was a matter for conjecture whether the nucleus of the stone had lain originally in the bladder or the kidney. Had the stone been crushed first in its long axis the fracture of the blade would probably not have occurred and the litholapaxy could have been completed.

Slipped Epiphysis.

Dr. Wilfred Vickers showed a male patient, aged fifteen years, who had been admitted to hospital on April 16, 1935, with a history of pain at frequent intervals in the left hip over a period of eighteen months. He had also noticed shortening of the left leg, and he had suffered from a limp. Examination revealed that flexion and internal and external rotation were limited; the measurement from the anterior superior iliac spine to the medial malleolus on the left side was 86·8 centimetres (34¼ inches) and on the right side 88·1 centimetres (35¼ inches). The measurement from the umbilicus to the left medial malleolus was 91·5 centimetres (37 inches) and to the right malleolus 95 centimetres (38 inches). Treatment consisted in rest, exposure to sunlight, and the administration of vitamin *D* and a diet rich in calcium.

There was no reaction to the von Pirquet test. X ray examination on June 17, 1935, revealed appearances indicative of an old transverse fracture through the head of the femur with *coxa vara*; there was some possible traumatic osteoarthritis of the upper part of the acetabulum. On May 24, 1935, the X ray report was to the effect that the condition was evidently one of slipped epiphysis. There was a deformity, but union appeared to be firm. On July 2, 1935, the hip was manipulated under general anæsthesia, and no limitation of movement was noticed. A walking calliper was fitted on August 15, 1935.

Fracture of the Neck of the Femur.

Dr. Vickers's next patient was a male, aged forty-seven years, who had been admitted to hospital on June 29, 1935. He stated that he had broken his leg as the result of a fall five weeks previously. Examination revealed the typical deformity of a fracture of the neck of the femur. There was shortening to the extent of 2·5 centimetres (one inch). Extension was applied, the leg being in an abducted position, for one week; a weight of 4·5 kilograms (ten pounds) was used. At the end of a week there was no apparent shortening. On September 23, 1935, a Smith-Petersen pin was inserted.

Thrombocytopenia.

Dr. Vickers's next patient was a child, aged four years, who had been admitted to hospital on July 10, 1932. Two days previously the leg had appeared to be chafed. Then a large area of redness with blisters had appeared. The child was not very sick at the time of admission. There were reddish-blue areas on the medial and anterior aspects of the lower third of the femur and the upper third of the tibia of both limbs, consisting of large ecchymoses and severe large bluish blisters, varying from 0·3 centimetre to 2·5 centimetres (one-eighth to one inch) in diameter. The areas were tender and had a slightly brownish tinge. A few large ecchymoses were seen on the right ear. The red blood cells numbered 2,680,000 per cubic millimetre, and the leucocytes 25,000 per cubic millimetre; the hæmoglobin value was 85% and the colour index 1·0. The blood platelets were too scanty to be counted. The blood coagulation time was under five minutes. In a test for the estimation of the bleeding time, bleeding had not ceased at the end of two minutes. The child was very refractive. Calcium lactate and "Radiostoleum" were given. On July 14, 1932, the general condition was improved; the right ear and one eye were swollen and black. On July 15, 1932, blood transfusion was given. There was an extensive hæmorrhage on the back. On July 22, 1932, the tip of the first toe of one foot was noticed to be very black. The general condition was good. On July 24, 1932, the legs had a greenish tinge. On July 25, 1932, a line of demarcation was observed in the right leg, and four days later there was a well marked area of demarcation in each leg. On August 12, 1932, both feet were removed by disarticulation at the ankle joints. On August 17, 1932, sloughs separated from the ear.

Histological examination of arteries from the dorsal and plantar surfaces of both feet showed no evidence of endarteritis. On September 7, 1932, the blood platelets numbered 924,000 per cubic millimetre, the bleeding time was 1 minute 45 seconds, and the blood coagulation time 3 minutes 30 seconds.

The patient was discharged from hospital on April 7, 1933.

NOMINATIONS AND ELECTIONS.

The undermentioned have been elected members of the Victorian Branch of the British Medical Association:

Brewer, Henry Leo, M.B., B.S., 1932 (Univ. Melbourne), Beeac.

Frew, John Lewtas, M.B., B.S., 1935 (Univ. Melbourne), Royal Melbourne Hospital, Melbourne, C.1.

Gabriel, John Kenneth, M.B., B.S., 1935 (Univ. Melbourne), Royal Melbourne Hospital, Melbourne, C.1.

Macdonald, Ian Campbell, M.B., B.S., 1933 (Univ. Melbourne), 5, Muchell Grove, East Coburg, N.13.

Manson, Clement Polson, M.B., B.S., 1933 (Univ. Melbourne), Allandale, Melton South.

Milroy, William Hugh, M.B., B.S., 1935 (Univ. Melbourne), Royal Melbourne Hospital, Melbourne, C.1.

Parker, Ronald John, M.B., B.S., 1935 (Univ. Melbourne), Saint Vincent's Hospital, Fitzroy, N.6.

Plarre, Frieda Elsa, M.B., B.S., 1935 (Univ. Melbourne), Royal Melbourne Hospital, Melbourne, C.1.

Russell, Kenneth Fitzpatrick, M.B., B.S., 1935 (Univ. Melbourne), 218, Orrong Road, Toorak, S.E.2.

Steel, Thomas Heron, M.B., B.S., 1935 (Univ. Melbourne), Royal Melbourne Hospital, Melbourne, C.1.

Williams, Howard Ernest, M.B., B.S., 1935 (Univ. Melbourne), 21, Barrington Avenue, Kew, E.4.
Matheson, Alexander Dougald, M.B., B.S., 1935 (Univ. Melbourne), Royal Melbourne Hospital, Melbourne, C.1.
Richmond, James Jackson, M.B., B.S., 1933 (Univ. Melbourne), 73, Queens Road, Melbourne.
Andrew, Richard Roderick, M.B., B.S., 1935 (Univ. Melbourne), Royal Melbourne Hospital, Melbourne, C.1.
Lewis, Nancy, M.B., B.S., 1935 (Univ. Melbourne), Mooltan Avenue, East St. Kilda, S.2.
Mackie, Margaret Alison, M.B., B.S., 1935 (Univ. Melbourne), Royal Melbourne Hospital, Melbourne, C.1.

Medical Societies.

THE MEDICAL DEFENCE SOCIETY OF QUEENSLAND.

THE annual meeting of the Medical Defence Society of Queensland was held at the B.M.A. Building, 35, Adelaide Street, Brisbane, on January 30, 1936, DR. ALEX. MARKS, the President, in the chair.

Annual Report and Financial Statement.

The annual report of the Council and the financial statement for the year ended December 31, 1935, were presented and adopted on the motion of the President, seconded by Dr. R. G. Quinn. The report is as follows.

The Council has pleasure in presenting the following report of the Society for the year ended 31st December, 1935.

Membership.—The total membership of the Society is 365, exclusive of 13 members whose subscription for the current year had not been paid by the 31st December.

Our gains have been: newly elected members, 17; members who have rejoined, 7. Our losses have been as follows: 6 members left the State, 2 resigned and 3 deceased. Total gain for the year was 13.

We regret to record the following deaths: Dr. Cletus McShane, Dr. A. Braccer and Dr. N. A. A. Trenow.

Office-Bearers and Council.—Office-bearers and councillors elected for 1935 were as follows:

President: Dr. A. H. Marks.
Vice-President: Dr. Donald A. Cameron.
Honorary Secretary: Dr. Neville G. Sutton.
Honorary Treasurer: Dr. R. G. Quinn.
Councillors: Dr. A. G. Anderson, Dr. A. B. Carvosso, Dr. G. W. Macartney, Dr. S. F. McDonald, Dr. W. N. Robertson, Dr. Kerr Scott, Dr. H. S. Waters.

Medico-Legal.—Nine cases were submitted to the Council. Of these, one case was taken to court and won by the member, to whom costs against the plaintiff were granted, but, owing to his financial position, no amount could be collected. As the case was an important one to the profession, it was decided to obtain a typescript copy of the evidence for submission to THE MEDICAL JOURNAL OF AUSTRALIA for publication if possible. One case was taken up on behalf of a member, but did not go to court, as an agreement was reached between the parties. In one case advice was given, after consultation with the Society's solicitors. Two cases were submitted by members whose subscriptions were over two years in arrears, which excluded them from the privileges of membership. Advice was given in one of these cases, however, on the question of the Statute of Limitation, in connexion with a claim made against the member. The Council gave advice in one case and no action could be taken by the Society in the remaining three cases which were submitted.

Finance.—The total assets of the Society are £3,904 5s. 4d., of which £2,882 3s. 6d. is invested in Australian Consolidated Treasury Bonds and £509 7s. 6d. in Australian Consolidated Inscribed Stock. The total expenditure amounted to £575 6s. 5d., the sum of £519 8s. 9d. being paid for legal costs, leaving a balance of £55 17s. 8d. for ordinary running expenses of the Society. The sum of £220 18s. was received for entrance fees and annual subscriptions, and the amount of income from investments totalled £161 11s. 4d., which included £10 representing interest for 1934 and 1935 from shares held in the Queensland Medical Land Investment Co., Ltd., and paid during the currency of the year under review.

The year's operations have resulted in a debit balance of £192 17s. 1d., due to the cost of legal expenses.

(*Signed*) ALEX. H. MARKS,
President.

Reference was made to the satisfactory position of the Society when taking into consideration the small subscription and membership. Discussion also took place with regard to the Society making arrangements for indemnity insurance on behalf of the members, and it was stated that so far it had been impossible to obtain satisfactory terms, but the matter was still receiving attention.

Election of Officers.

Dr. W. N. Robertson and Dr. A. B. Carvosso, who had retired in conformity with the by-laws of the Society, were unanimously reelected. Dr. Kenneth Wilson was elected to take the place of Dr. Kerr Scott, who did not seek reelection, as he had gone abroad.

Messrs. R. G. Groom and Company, Chartered Accountants (Aust.), were reelected auditors for the ensuing year.

Post-Graduate Work.

THE NEW SOUTH WALES POST-GRADUATE COMMITTEE IN MEDICINE.

PROGRAMME FOR 1936.

April 4 and 5: Week-End Course at Armidale.

A series of lecture demonstrations in medicine and surgery will be given by Dr. G. C. Willcocks and Dr. V. M. Coppleson. The fee for the course is one guinea, and application should be made to Dr. A. G. Brydon, Honorary Secretary, Northern District Medical Association, Faulkner Street, Armidale.

May 25 to June 5: General Revision Course.

The course is especially designed for the general practitioner and deals with all aspects of medicine. Railway concession tickets will be available to those attending this course, their wives, sons under sixteen years, and their daughters. The fee for the course is three guineas, or two guineas for one week only or for mornings or afternoons only. For those not engaged in active practice half these fees will be charged. (Supervisor, Dr. J. Steigrad.)

July 20: Course for M.S. Part I Examination, The University of Sydney.

Lectures will be given during the afternoons only, and the course will be of approximately twelve weeks' duration. The fee for the course will be twenty guineas. (Supervisor, Dr. N. R. Wyndham.)

August 8 and 9: Week-End Course at Lismore.

Details of this course will be published later.

August 15 and 16: Week-End Course in Diabetes Mellitus.

This course will be held at the Royal Prince Alfred Hospital, Sydney, and will deal with all aspects of *diabetes mellitus*. The course will be held only if a minimum number of eight apply. The fee for the course is one guinea, and application should be made as soon as possible. (Supervisor, Dr. J. Kempson Maddox.)

August 31 to September 6: Course in Obstetrics.

Those taking this course, which will be limited to eighteen, will reside at either the Royal Hospital for Women, Paddington (8), or the Women's Hospital, Crown Street (10). The fee for the course is five guineas, which will include board and residence. Applications should state the hospital at which residence is desired, and precedence will be given in order of application. The list will be closed when the required number has applied. Residence will be for one week from Sunday evening, August 30. (Supervisor, Dr. G. Stening.)

October 16 to November 13: Course in Tuberculosis.

This course will be held on Monday, Wednesday and Friday afternoons for three weeks, and is especially designed for those in general practice. It will be held only if a minimum number of eight apply. The fee for the course is three guineas. (Supervisor, Dr. W. L. Calov.)

November 16 to 20: Course in Clinical Laboratory Methods.

This course is designed particularly for the general practitioner and will be full time. It will be held in the Kanematsu Institute of the Sydney Hospital. Eight members only will be accepted for this course, and registration will be made in order of receipt of applications. The fee for the course is five guineas and should accompany the application. The list will be closed when the required number has applied.

Anæsthetics.

Tuition in the practical administration of anæsthetics will be arranged on application. Fee, five guineas per week. This course is limited to one post-graduate at any given time. Bookings must be made.

Cancer.

Attendance at clinics of the Royal Prince Alfred Hospital, the Saint Vincent's Hospital and the Prince Henry Hospital is available to practitioners throughout the year without fee.

Infant Feeding.

Instruction in the care and feeding of infants, the care of the premature baby, difficulties with lactation and difficulties in artificial feeding will be given at the Tresillian (Vaucluse) Mothercraft Training School throughout the year, without fee, on Mondays and Wednesdays at 2.30 p.m.

Obstetrics: Residence at Obstetric Hospitals.

Residence in the medical officers' quarters for seven to fourteen days will be arranged on application, at either the Royal Hospital for Women, Paddington, or the Women's Hospital, Crown Street. Whilst no special instruction will be given, those in residence will be afforded every opportunity of seeing the work of the institution. Dates may be booked and a registration fee of one guinea must accompany the application. This fee will be forfeited unless seven days' notice of any cancellation is given. The fee for the course, including board and residence, is two guineas per week.

Tuberculosis.

Instruction in the diagnosis and treatment of tuberculosis will be available throughout the year without fee.

A week-end course in conjunction with the Western Medical Association will be arranged during 1936. The date and place where this will be held will be notified at a later date.

PROGRAMME FOR 1937.

May.

General revision course.

Course of lectures by Professor Jonathan Meakins, LL.D. (Hon.) (Edinburgh), M.D., C.M. (Magill), F.R.C.P. (Edinburgh), Physician-in-Chief of the Royal Victoria Hospital, Montreal, Director of the Department of Medicine of the Magill University, and late Christison Professor of Therapy, University of Edinburgh.

APPLICATION TO ATTEND COURSES.

Applications to attend any of these courses, except where otherwise stated, should be made to the Secretary, New South Wales Post-Graduate Committee in Medicine, The University of Sydney, from whom any further information may be obtained.

Congresses.

INTERNATIONAL CONGRESS FOR MICROBIOLOGY.

THE Second International Congress for Microbiology will be held at London from July 25 to August 1, 1936, under the presidency of Professor J. C. G. Ledingham, of the Lister Institute, London. University College, Gower Street, London, will be the headquarters, and all scientific sections will hold their meetings at the college. Enrolled members of the International Society for Microbiology and all other persons interested in the business of the sections may become members of congress on payment of a subscription of one pound sterling to the Honorary Treasurer, Dr. J. T. Duncan, London School of Hygiene and Tropical Medicine, Keppel Street, London, W.C.1.

The sections are as follow. Section I: General Biology and Micro-organisms; Section II: Viruses and Virus Diseases in Animals and Plants; Section III: Bacteria and Fungi in Relation to Disease in Man, Animals and Plants: Section IV: Economic Bacteriology, Soil, Dairying and Industrial Microbiology; Section V: Medical, Veterinary and Agricultural Zoology and Parasitology; Section VI: Serology and Immunochemistry; Section VII: Microbiological Chemistry; Section VIII: Specific Immunization in the Control of Human and Animal Disease.

The Honorary General Secretary is Dr. R. St John-Brooks, Lister Institute of Preventive Medicine, Chelsea Bridge Road, London, S.W.1.

INTERNATIONAL CONFERENCE ON FEVER THERAPY.

THE first International Conference on Fever Therapy will be held in New York City in September, 1936. The object of the conference is to "collect and crystallize" available data on fever therapy. Therapeutic, physiological and pathological phases of fever will be discussed. Further information may be obtained from the Secretary, Dr. William Bierman, 471, Park Avenue, New York City.

Public Health.

A CONFERENCE ON CRIPPLED CHILDREN.

THE Director-General of Health, Commonwealth Department of Health, announces that a conference of those interested in the treatment of crippled children will be held at the Institute of Anatomy, Canberra, on April 6 to 8, 1936. The conference will start at 2.30 p.m. on April 6.

This conference is the outcome of the gift by Lord Nuffield for the treatment of crippled children. The conference will be open, not only to members of the medical and nursing professions, but also to any other person who may have a definite interest in the work. All delegates to the conference will have to arrange for his or her own expenses. A tentative programme, covering a wide range of subjects, has been drawn up.

Correspondence.

INTERFERENCE WITH THE CERVICAL SYMPATHETIC CHAIN: A CLINICAL OBSERVATION.

SIR: Permit me to record in your journal a symptom caused through interference with the cervical sympathetic chain.

While operating under "Novocain" anæsthesia for removal of the cervical sympathetic for relief from *angina pectoris* a small artery with a finer vessel was observed entering the provertebral muscles about an inch below the superior cervical ganglion. Tying the artery was uneventful, but the smaller vessel on being tied caused pain above the eye till the ligature was tightened. On removing the sympathetic, this ligature proved to be on a branch lateral to the superior cardia nerves, from its direction seemingly to communicate with the spine.

There has been no pain subsequently above the eye; in a previous removal of a cervical sympathetic for *angina pectoris* relief, pain above the eye was a constant feature for some months, so much so that the patient was X rayed for possible frontal sinus involvement.

Pain in the head may be caused from the neck, though in the course of the trigeminal, and in cases where the cause is obscure, it might pay to examine the neck.

Yours, etc.,

E. A. JOSKE, M.B., B.S. (Melb.).

261, North Terrace,
Adelaide,
February 23, 1936.

PSYCHOANALYSIS.

SIR: I have read with interest the article by Dr. R. Coupland Winn on psychoanalysis in your journal of February 29, 1936. He makes out a very good case for a very poor method of dealing with psychoneurotics.

Freud might well pray: "Save me from my friends", for his ardent disciples are rushing headlong towards that oblivion that awaits all those fantastic theories which are founded on a false premise, by piling the Pelion of infantile sexuality on the Ossa of the unconscious until the whole structure totters before the ridicule of intelligent people.

When an enthusiastic Freudian explains a child's natural timidity and bashfulness in the presence of strangers as the expression of a repressed sadistic impulse, it gives one cause to wonder to what absurd and illogical ends this pseudo-science will eventually go in an attempt to explain natural tendences and instincts.

The hidden complexes, which the psychoanalyst claims he is the only one competent to elucidate, seem to reveal the strange ramifications of his own mental processes rather than those of the patient.

The persistent search for some erotic motivation of the patient's conduct only serves to direct his attention to an aspect which is better avoided, as the majority of psychoneurotics are introspective enough without having another source of self-analysis added to their already excessive tendencies in this direction.

The emphasis that the proponents of this form of psychotherapy place on the "ego" is ironically appropriate, for one has but to read their effusive vapourings to realize their own extreme self-absorption and self-appreciation.

What Dr. Ellery, of Melbourne, described so aptly recently as the "totem of the tonsil" has given place to the Freudian fallacy, and this in turn will be superseded by some other speculative fancy, and so on *ad infinitum*.

The theory of infantile sexuality is the greatest libel that has ever been published about the human race, and I personally would hate to think that the minds of those whom I respect and esteem are the turbulent cesspools of lasciviousness that the psychoanalysts would have us believe, even if, by admitting this, I lay myself open to the charge that I too suffer from repressions and complexes.

The greatest argument against the Freudian doctrine lies in the fact that it has been so readily accepted and practised by charlatans and unqualified persons, thus bringing it *en rapport* with phrenology, hypnotism and clairvoyance.

Yours, etc.,

JOHN MCGEORGE, M.B., Ch.M., Dip.Psych.

Macquarie Chambers,
183, Macquarie Street,
Sydney,
February 29, 1936.

SIR: The article on psychoanalysis by Dr. R. Coupland Winn, published in your issue of February 29, should not pass without some protest. Anyone who has travelled in the East or who is conversant with its literature, knows that sex plays an enormously greater part in social life, in psychology, in art and religion than in occidental, and particularly Nordic, peoples. Psychoanalysis is of oriental origin and its emphasis on sex is out of place in a Nordic community like Australia. This intrusion of eroticism into sculpture, painting, fiction and drama, and the attempt to find a sex basis for some of the purest relationships, like that between comrades, have been responsible for a good deal of recent German resentment and action. The first sentence in the author's own summary is: "The majority of illnesses are psychological in origin." I have no desire to dictate to the Editor and his staff, but surely a scientific journal is hardly the place for such balderdash.

Yours, etc.,

W. A. OSBORNE.

The University,
Melbourne, N.3,
March 3, 1936.

HISTIDINE TREATMENT OF PEPTIC ULCERS.

SIR: I should be grateful for information from any who have had experience of the above treatment, of which I have read and heard extraordinarily conflicting reports.

With thanks in anticipation.

Yours, etc.,

"A SUFFERER."

March 1, 1936.

NOTICE.

THE VICTORIAN MEDICAL BENEVOLENT ASSOCIATION.

MEMBERS of the Victorian Branch of the British Medical Association are notified that the annual meeting of the Victorian Medical Benevolent Association will be held at the rooms of Dr. E. L. Gault, 2, Collins Street, Melbourne, on Tuesday, March 24, 1936, at 12.45 p.m.

Books Received.

FIFTY YEARS A SURGEON, by R. T. Morris, M.D.; 1935. London: Geoffrey Bles. Sydney: Angus and Robertson. Super royal 8vo, pp. 285. Price: 12s. net.

THE AIMS AND METHODS OF MEDICAL SCIENCE: AN INAUGURAL LECTURE, by J. A. Ryle, M.A., M.D., F.R.C.P.; 1935. Cambridge: The University Press. Melbourne: S. Jaboor. Crown 8vo, pp. 44. Price: 2s. net.

Diary for the Month.

MAR. 16.—Federal Council, B.M.A.
MAR. 17.—New South Wales Branch, B.M.A.: Medical Politics Committee.
MAR. 18.—Western Australian Branch, B.M.A.: Branch.
MAR. 24.—New South Wales Branch, B.M.A.: Council (quarterly).
MAR. 25.—Victorian Branch, B.M.A.: Council.
MAR. 26.—New South Wales Branch, B.M.A.: Annual Meeting.
MAR. 26.—South Australian Branch, B.M.A.: Branch.
MAR. 27.—Queensland Branch, B.M.A.: Council.
MAR. 31.—New South Wales Branch, B.M.A.: Council (Election of Office-Bearers and Appointment of Standing Committees).

Medical Appointments.

Dr. E. H. Derrick has been appointed Director, Laboratory Section, Department of Public Health, Brisbane, Queensland, in pursuance of the provisions of *The Public Service Acts*, 1922 *to* 1924, and *The Health Acts*, 1900 *to* 1934.

* * *

Dr. C. B. Sangster has been appointed Honorary Clinical Assistant to the Medical Section at the Adelaide Hospital, South Australia.

* * *

Dr. K. H. Grieve has been appointed Medical Officer, Office of the Director-General of Public Health, New South Wales.

* * *

Dr. C. G. Berge has been appointed Honorary Ophthalmic Surgeon, Newington State Hospital and Home, Newington, New South Wales.

* * *

Dr. G. R. Beattie has been appointed Government Medical Officer at Winton, Queensland.

* * *

Dr. A. E. Coates has been appointed a Member of the Dental Board of Victoria, pursuant to the provisions of Section 38 of the *Medical Act*, 1928.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser", pages xvi-xviii.

ADELAIDE CHILDREN'S HOSPITAL, ADELAIDE, SOUTH AUSTRALIA: Resident Medical Officer.

CHILDREN'S HOSPITAL, CARLTON, VICTORIA: Assistant Resident Medical Officer.

COMMONWEALTH OF AUSTRALIA: Temporary Medical Officer, Government Pathologist.

LEWISHAM HOSPITAL, SYDNEY, NEW SOUTH WALES: Honorary Pathologist, Clinical Assistant.

QUEEN'S MEMORIAL INFECTIOUS DISEASES HOSPITAL, FAIRFIELD, VICTORIA: Junior Resident Medical Officer.

REPATRIATION COMMISSION, MELBOURNE, VICTORIA: Resident Medical Officer.

SYDNEY HOSPITAL, SYDNEY, NEW SOUTH WALES: Honorary Relieving Assistant Surgeon.

THE WOMEN'S HOSPITAL, CROWN STREET, SYDNEY, NEW SOUTH WALES: Resident Medical Officer.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCHES.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 135, Macquarie Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company Limited. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association, Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Brisbane Associate Friendly Societies' Medical Institute. Chillagoe Hospital. Richmond District Hospital, North Queensland. Members accepting LODGE appointment and those desiring to accept appointments to any COUNTRY Hospital, are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.
SOUTH AUSTRALIAN: Secretary, 207, North Terrace, Adelaide.	All Lodge appointments in South Australia. All Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 205, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.
NEW ZEALAND (Wellington Division): Honorary Secretary, Wellington.	Friendly Society Lodges, Wellington, New Zealand.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

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SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and booksellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £1 for Australia and £2 5s. abroad *per annum* payable in advance.